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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR 1994

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BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES ONE HUNDRED THIRD CONGRESS

FIRST SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS

BOB CARR, Michigan, *Chairman*

RICHARD J. DURBIN, Illinois
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DELACROIX DAVIS III, RICHARD E. EFFORD, CHERYL L. SMITH, and LINDA J. MUIR,
Subcommittee Staff

PART 6

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National Transportation Safety Board	1
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DEPARTMENT OF TRANSPORTATION AND RELATED AGENCIES APPROPRIATIONS FOR 1994

TUESDAY, MARCH 16, 1993.

NATIONAL TRANSPORTATION SAFETY BOARD

WITNESSES

CARL W. VOGT, CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD
TERRY BAXTER, MANAGING DIRECTOR

TIMOTHY P. FORTÉ, DIRECTOR, OFFICE OF AVIATION SAFETY
BERNARD S. LOEB, DIRECTOR, OFFICE OF RESEARCH AND ENGINEERING
GEORGE L. REAGLE, DIRECTOR, OFFICE OF SURFACE TRANSPORTATION
BARRY M. SWEEDLER, DIRECTOR, OFFICE OF SAFETY RECOMMENDATIONS

OPENING REMARKS

Mr. CARR. This morning we will hear testimony from the National Transportation Safety Board. Our principal witness is the new chairman of the Board, Mr. Carl Vogt. Chairman Vogt, we are pleased to welcome you in your first appearance before this subcommittee.

The NTSB is an independent agency which serves an important function in investigating transportation accidents and determining their causes. You also serve a valuable role in making safety recommendations and highlighting important safety-related issues and problems in transportation. The report just issued by the Safety Board on reducing youth involvement in highway crashes is just one example of the role the Safety Board plays in taking a fresh look at certain transportation safety issues and making public policy recommendations, which I am sure will be appreciated on Capitol Hill and possibly criticized by others.

Our focus at today's hearing will be on your work on transportation safety issues and your accident investigations. We will take up specific questions on your agency operations and the fiscal year 1994 budget request in several weeks after we receive the President's budget and your budget justifications.

Chairman Vogt, again let me welcome you and your supporting staff to the Committee. We will insert your statement in its entirety in the record. I would ask you to proceed with some highlights and any comments you wish to make, and then we will get right to questions.

OPENING STATEMENT OF CARL VOGT

Mr. VOGT. Thank you, Mr. Chairman. It is a great pleasure and privilege for me to be here today to represent the National Transportation Safety Board and to discuss with you our reports and programs.

Before we get into our activities, I would like to introduce our senior management staff with me today.

On my immediate left is Mr. Terry Baxter, our managing Director; George Reagle on his left, our Director of the Office of Surface Transportation Safety; Dr. Bernie Loeb, our Director of our Office of Research and Engineering is on his left; on my immediate right is Tim Forté, the Director of our Office of Aviation Safety; and on his right is Barry Sweedler, Director of the Office of Safety Recommendations.

Mr. Chairman, last year marked the 25th anniversary of the National Transportation Safety Board, and we believe there is no doubt that the Board has significantly raised the level of transportation safety in the United States and many other nations. I am new to this job, as you pointed out, so I have been able to examine this record afresh, and it is something of which all the people at the Board and I are very proud.

As a result of more than 50,000 Safety Board accident investigations in the past quarter of a century, 9,000 recommendations to reduce loss of life and accident recurrences were issued to Government agencies, private companies, trade associations, and others covering a wide range of safety improvements. Mr. Chairman, 8 out of 10 of these recommendations have been implemented over the years, a record of which I think we can be very proud.

For example, according to our records, there were 52 aviation accidents killing 226 people in the United States involving scheduled passenger service in 1967. This was the Safety Board's first year of operation. Considering that some 134 million passengers flew slightly more than 2.1 billion miles that year, it wasn't a bad record. However, last year, there were 40 U.S. accidents and 52 passenger deaths involving scheduled service, yet more than 3.5 times as many people flew twice as many miles as in 1967.

The news is also encouraging for surface transportation safety. Although final National Highway Traffic Safety Administration figures are not yet available, 1992 may mark the first time in modern years when fewer than 40,000 people died on our highways, railroads, and waterways.

These achievements were possible only through the hard-fought efforts of many people in public and private life. The Congress was particularly responsible for advancements. And as I mentioned earlier, the Safety Board can lay its claim to a portion of these achievements.

Our work, however, is far from done. Travellers continue to face safety hazards. We are all aware of accidents that have happened in the last year and we will discuss some of those with you.

We need to reduce the amount of time it takes from launching a "Go Team" to the actual adoption of an accident report by the Board. We need to reduce the amount of time it takes for our recommendations to be implemented. And we need to retain our ac-

knowledgeed ability to respond to upcoming transportation challenges.

With the introduction of high speed trains in the United States, development of new composite materials, and the advent of intelligent highways there has been an explosion of new transportation technologies that places demands on us. The Safety Board's responsibility must be to maintain the highest level of technical competence and expertise in these fields in order to respond effectively when accidents occur.

As an aside, I would say, Mr. Chairman, that there is no substitute for experience and expertise and people.

We are committed to these goals, and I know this panel is. We all look forward to working with you and your colleagues to help ensure a safe national transportation network.

That concludes my introductory remarks. I would be pleased to take whatever questions you have.

[The biography and prepared statement of Mr. Vogt follows:]



National Transportation Safety Board

Washington, D.C. 20594

CARL W. VOGT Chairman

Carl W. Vogt became a member and chairman of the National Transportation Safety Board on June 23, 1992. Mr. Vogt is the seventh chairman in the history of the 25-year old Safety Board.

Mr. Vogt, a native of Houston, Texas, was managing partner of the Washington office of Fulbright & Jaworski, a Texas-based law firm. He also was a member of the board of the National Railroad Passenger Corporation (Amtrak) and served on the Federal Aviation Administration's Aviation System Capacity Advisory Committee.

After graduating in 1958 from Williams College where he was a member of the Senior Honors Society, Mr. Vogt served in the U.S. Marine Corps as a jet fighter pilot. He served one tour of duty aboard the aircraft carrier USS Lexington. In 1965 Mr. Vogt earned his law degree from the University of Texas. As an attorney, Mr. Vogt has specialized in general civil litigation and administrative law matters.

Active in professional and community affairs, Mr. Vogt has held positions with the American Bar Association, the National Association of College and University Attorneys, the U.S. Chamber of Commerce, the Greater Washington Board of Trade, the 1991 Greater Washington United Way Campaign and is a Fellow of the American Bar Foundation. He also was a founding trustee of the Chinquapin School for underprivileged boys in Highlands, Texas.

Mr. Vogt is the holder of a commercial pilot's license and is an active sailor. He is married and has two daughters.

Mr. Vogt's current term on the National Transportation Safety Board expires December 31, 1996; he is serving a two-year term as chairman.



National Transportation Safety Board

Washington, D.C. 20594

Safety Information

Testimony of
Carl W. Vogt, Chairman
National Transportation Safety Board
Before the
Committee on Appropriations
Subcommittee on Transportation and Related Agencies
House of Representatives
Regarding
Fiscal Year 1994 Budget Request

March 16, 1993

Chairman Carr, Congressman Wolf and members of the Subcommittee. I am very pleased to be here this morning to represent the National Transportation Safety Board.

Last year marked the 25th anniversary of the National Transportation Safety Board (NTSB), and we believe there is no doubt that the Board has significantly raised the level of transportation safety in the United States, and in many other nations, during its existence. This has been accomplished by thorough accident investigations and timely, well considered safety recommendations to correct the deficiencies in our transportation system that were identified in these investigations.

As a result of more than 50,000 Safety Board accident investigations in the past quarter-century, we have issued more than 9,000 safety recommendations covering a wide range of safety improvements. Safety studies have also been undertaken in order to examine problems from a broader, more systemic perspective.

Yet ultimately, the Board's success rests on the acceptance of its safety recommendations. Safety recommendations are our most important product, and they are vital to the Safety Board's basic role of accident prevention since they are the lever used to bring about changes and improvements in the safety of the nation's transportation system.

"Most Wanted"

While all the recommendations made by the Board will, if implemented, improve safety and help prevent accidents, some are so important that the Board gives them greater emphasis than others. The Board's "Most Wanted" list, a copy of which is attached at the end of the testimony, is the vehicle employed to stress recommendations having the greatest potential for saving lives. There are currently 17 topics on the list:

- * boating while intoxicated
- * administrative revocation of driver's licenses
- * airport runway incursions
- * positive train separation
- * aircraft collision avoidance in airport terminal areas
- * fishing vessel safety
- * mandatory seatbelt use laws
- * adjustable upper anchor point for lap/shoulder automobile seatbelts
- * safety standards for railroad tank cars carrying hazardous materials
- * fatigue and work hour schedules for transportation workers
- * school bus safety
- * structural fatigue testing of aircraft
- * passenger vessel safety
- * uniform industry-wide policy on alcohol/drug testing

- * runway stopping performance of transport airplanes
- * heavy commercial truck safety, and
- * pipeline excess flow valves

The Board takes many actions to stress these necessary transportation safety improvements, and to encourage recommendation recipients to implement them. Once implemented, the Board acknowledges the positive development.

Last year, for example, the Board voted to remove the issue of Ground Proximity Warning Systems (GPWS) for commuter airplanes from the "Most Wanted" list after the Federal Aviation Administration (FAA) issued final rules regarding this matter. Even though GPWS is no longer on the "Most Wanted" list, the issue has not been abandoned and we continue to monitor the FAA's proposal.

The removal of a safety item from the Board's "Most Wanted" list is just one measure of the Board's impact. Another measure is the overall acceptance rate for Board safety recommendations. Eight out of ten of all safety recommendations issued over the years have been implemented, resulting in a safer environment for every traveler. We believe the Safety Board can rightfully take satisfaction in its role as an advocate for transportation safety -- and pride in the results we have seen in these last 25 years.

Transportation Fatalities in 1992

America's transportation system again showed safety improvements in 1992 as fewer accidents and deaths were reported compared to previous years. Although only preliminary data is available at this time, it would appear that in 1992 fewer than 40,000 people died on our transportation systems. Transportation-related fatalities in 1991 totalled 43,554, compared with 47,014 in 1990.

In aviation, preliminary statistics show the number of fatalities aboard commuter airplanes dropped to 21 in 1992 -- from 77 a year earlier. Large commercial carriers registered four fatal accidents and 33 fatalities in 1992, compared to the same number of fatal accidents and 50 deaths the year before. The 33 fatalities represent the lowest number of deaths since 1986, when five persons died in that category.

In general aviation, although there were fewer fatal accidents (408), more people (812) were killed in 1992 than the previous year. The comparable numbers for 1991 were 414 fatal accidents and 746 deaths.

Because major aviation accidents happen so seldom, the number of fatalities can fluctuate from year to year. Even in high fatality years, such as those experienced in the late 1980s, relatively few accidents occur. We are convinced that the Safety Board's efforts through the years have contributed to this impressive record.

1992 Summary

Last year, 353 safety recommendations were issued as a result of 20 major and 2,290 regional Board investigations, as well as nine safety studies and special investigative reports.

Although I cannot discuss every investigation and recommendation, I would like to highlight some of the Board's work.

Aviation

Airplane Deicing

Almost a year ago today, USAir flight 405 crashed on takeoff on a snowy evening at New York's LaGuardia airport 35 minutes after its second deicing. Twenty-seven of the fifty-one people on board died.

Last month, the Safety Board determined that the probable cause of the accident was the failure of the airline industry and the Federal Aviation Administration to provide flightcrews with procedures, requirements and criteria compatible with departure delays during icing and snowy conditions. Also listed in the adopted probable cause statement was the decision by the flightcrew to take off without positive assurance that the airplane's wings were free of ice accumulation after 35 minutes of exposure to precipitation

following the second deicing. Airframe icing, even in minute amounts, can jeopardize an airplane's ability to fly, and extreme care must be used by crewmembers when assessing wing ice contamination.

This accident prompted both the FAA and others in the aviation community to focus renewed attention on the problems confronting flightcrews operating in winter conditions. Following an international symposium on airframe icing in May 1992, the FAA imposed requirements on airlines to define and implement deicing procedures, and instituted changes in air traffic control procedures and airport operations to minimize the time that airplanes will be exposed to icing conditions following deicing. At the same time, the industry is developing technologies to detect the presence of minute amounts of frozen contamination on the upper surface of airplane wings.

The Safety Board issued additional recommendations directed at operational procedures, air traffic delays during icing conditions, the inspection of aircraft for possible ice contamination, and the composition of deicing fluid used on certain planes.

United Airlines/Colorado Springs, Colorado

Calendar year 1992 marked only the fourth time in the Safety Board's history that we were unable to conclusively determine the probable cause of a large air carrier accident. On March 31, 1991, in clear skies and at an altitude of approximately 1,000 feet above the ground, United flight 585

suddenly rolled to the right, pitched nose down to reach a nearly vertical attitude, and impacted the ground. All 25 persons aboard the flight were killed.

The two most likely events that could have resulted in the accident were a malfunction of the aircraft's lateral or directional control system, or an encounter with an unusually severe atmospheric disturbance. Although anomalies were identified in the airplane's rudder control system, none would have produced a rudder movement that could not have been countered by the airplane's lateral controls. The most likely atmospheric disturbance to produce an uncontrollable rolling moment was a rotor produced by a combination of high winds aloft and the mountainous terrain at Colorado Springs.

After a 20-month long investigation, and despite exhaustive efforts by the investigative team, the Board could not identify conclusive evidence to explain the cause of the accident.

This was one of several major investigations that have been hampered recently because the aircraft were equipped with old, 4-parameter flight data recorders. We believe the failure to require more state-of-the-art recorders is a false economy when it prevents us from determining what happened to a plane like the Boeing 737, one of the workhorses of the U.S. airline fleet.

The FAA, as a result of Board recommendations, has agreed to initiate a two-phase program to document and analyze potential meteorological threats to aircraft operating in the Colorado Springs area, and develop a meteorological aircraft hazard program for airports in or near mountainous terrain.

Sightseeing Flight Operations

The sightseeing flight industry carries almost 2 million passengers a year in the United States and, since 1986, the Safety Board has investigated 11 sightseeing flight accidents resulting in 76 fatalities. All of the fatalities were either in Hawaii or near the Grand Canyon.

Recently the Safety Board made several recommendations to improve the safety of sightseeing flight operations as a result of our investigation into a fatal sightseeing accident in Hawaii last year in which nine occupants of a Scenic Air Tours plane crashed.

The absence of specialized oversight of air tour operations by the FAA was an issue in the investigation, and the Safety Board has recommended the establishment of a special regulatory classification for commercial sightseeing flights.

In the accident investigation, it was also discovered that the pilot had previously applied for employment at another Hawaiian airline but his application had been rejected after preemployment screening found that he had

misrepresented his employment history. Preemployment screening obviously can protect the public from unqualified pilots, and the Board believes the FAA should require commercial operators to implement such programs. Previous recommendations that the FAA require substantive preemployment screening were reissued.

A January 1993 fatal crash of a helicopter sightseeing flight into the ocean near the Hawaii Volcanoes National Park is also currently being investigated. The Safety Board is also working closely with the Canadian Government in its investigation of a midair collision between U.S. and Canadian sightseeing aircraft over the Niagara Falls on September 29, 1992.

United Airlines Flight 811/Boeing 747

The Safety Board is an acknowledged authority in piecing together the reasons accidents occur, and determinations of probable cause are based on exhaustive investigation. When pertinent material is uncovered, the Safety Board will reopen investigations.

Such was the case in the accident that occurred February 24, 1989, in Honolulu, Hawaii, involving United Airlines flight 811. The airplane experienced an explosive decompression after taking off from Honolulu with three flightcrew, 15 flight attendants, and 337 passengers aboard. The accident resulted in nine fatalities.

With the assistance of the U.S. Navy, the Safety Board recovered the plane's cargo door from the three-mile deep floor of the Pacific Ocean more than a year and a half after the accident, and several months after the accident report was adopted. The new evidence obtained through examining the recovered door prompted the Safety Board to revise its original report to delete the original report's reference to the cargo door being improperly latched. But the Safety Board reiterated its belief that a deficiency in the design of the cargo door contributed to the accident, and left standing three safety recommendations relating to B-747 cargo door.

Flight Attendant Training and Performance

While commercial airline accidents are rare, there are, nonetheless, a number of emergency situations that passengers may face in flight.

In some emergencies, passengers and crewmembers have sufficient time to prepare themselves for the situation. More often than not, an emergency occurs with little or no warning, and it may take place in combination with other abnormal situations, further compromising safety. For example, an encounter with severe air turbulence may cause injuries to the crew and passengers; and a bomb threat, a mechanical failure, or an in-flight fire can result in an immediate evacuation upon landing. In these cases, we depend on flight attendants to provide the most immediate assistance to passengers.

In several recent accident investigations, the Safety Board found that although flight attendants provided valuable assistance to passengers during

emergency situations, they did not always follow their air carrier's approved emergency procedures or perform their duties in accordance with their training. In two of the 24 evacuation cases cited in a special investigation report adopted by the Board in 1992, the actions of some flight attendants contributed to an increase in the number of passenger injuries.

The Safety Board is concerned that these same actions in other situations could have disastrous results, and that flight attendant training may not adequately prepare flight attendants for actions that they may be required to take.

As a result of our special investigation, the Safety Board made more than a dozen safety recommendations to the FAA that are intended to improve flight attendant training and performance during emergency situations. The FAA response to these recommendations is currently being evaluated.

Anniston, Alabama/GP Express

On June 8, 1992, GP Express flight 861 crashed on its final approach to Anniston Metropolitan Airport in Alabama. Two crewmembers and four passengers were on board. The captain and two passengers were killed, and the first officer and the two remaining passengers suffered serious injuries. GP Express had just begun operating the route three days before the accident. In a recently adopted report, the Safety Board determined the probable cause of the accident to be the failure of GP Express' senior management to provide

adequate training and operational support for the startup of the company's Southern operation which resulted in the placement of an inadequately prepared captain in initial revenue passenger service with a relatively inexperienced first officer. The failure of the flight crew to use approved instrument flight procedures which resulted in a loss of situational awareness and terrain clearance was also cited in the probable cause statement adopted by the Safety Board.

On-Going Major Aviation Accident Investigations

On June 16, 1992 a Cessna 402C operated by Adventure Airlines, Inc. crashed shortly after takeoff 1/2 mile south of the Grand Canyon West Airport. The pilot and nine passengers were fatally injured. Safety Board investigators recovered three videotapes from cameras among the personal effects in the aircraft wreckage, two of which recorded portions of the accident flight. Although the investigation continues, the video evidence and wreckage examination led the Board to issue urgent recommendations to the FAA and Cessna Aircraft Corporation to revise the minimum fuel loads for takeoff and flight for all Cessna 402Cs and other applicable Cessna 400 series aircraft. Inspections of all inlet float valves for wear were also called for by the Board.

Although a formal response from the FAA has not been received, an Airworthiness Directive was issued requiring fabricating and installing placards that specify higher unusable fuel levels and higher minimum fuel levels for takeoff for each main tank.

On July 30, 1992, TWA flight 843 crashed at JFK International Airport when the flightcrew elected to abort the takeoff, resulting in an emergency evacuation through the forward doors. The airplane was destroyed by fire. The Safety Board is examining pilot training in crew coordination for the takeoff phase, and airline maintenance quality assurance. The Board hopes to determine the probable cause from this investigation by the end of March.

Pegasus Launch Investigation

On February 16, 1993, the Department of Transportation requested that the Safety Board initiate an investigation into the February 9, 1993, launch of a Pegasus vehicle from an Air Force B-52 bomber by Orbital Sciences Corporation. Preliminary information indicates that an abort command was issued during the final seconds of the countdown; however, the launch proceeded and was uneventful. The National Transportation Safety Board and the Department of Transportation, Office of Commercial Space Transportation signed an agreement dated June 5, 1989, pursuant to which the Safety Board will conduct the investigation.

Foreign Investigations

A significant portion of the Safety Board's work involves our participation in investigations of aviation accidents and incidents that occur in other countries. Because of the ever increasing number of U.S. manufactured and U.S. registered airplanes operating overseas, and the responsibility the Board must fulfill as the United States' sole accredited

representative to the International Civil Aviation Organization (ICAO), this portion of our workload continues to increase, and last year was not an exception. The FAA, U.S. manufacturers and operators rely heavily upon the Board to facilitate their involvement in the investigation of foreign incidents and accidents.

To this end, the NTSB led the U.S. delegation of aviation industry accident investigation experts to the three-week ICAO Accident Investigation Divisional meeting at Montreal in February 1992. Accident investigation experts from more than 70 countries participated, and revisions to the international standards and practices for accident investigation and prevention were developed.

The U.S. delegation was comprised of NTSB experts and specialists from the FAA, the Air Transit Association of America (ATA), the Air Line Pilots Association (ALPA), the General Aviation Manufacturers Association (GAMA), and Aerospace Industries of America (AIA). Over 270 persons participated. The results of the meeting are highly significant to the interests of the U.S. aviation industry because of the industry's ever-expanding role in operating and selling aircraft and equipment overseas. The NTSB continues to monitor the results of this important meeting, and we have developed plans to cope with the ever-increasing workload required by our important role in investigating and preventing international accidents. Any accident, anywhere in the world, can have an adverse effect on U.S. interests and the traveling public.

Board investigators participated in 60 investigations in more than 50 different nations in 1992.

Recently, the Safety Board sent an accredited representative to lead the U.S. team in assisting the accident investigators of the People's Republic of China in the investigation of a China Southern Airways Boeing 737-300 that crashed on November 24 on approach to Guilin, China. The airplane crashed into the face of a nearly vertical cliff and the wreckage fell several hundred feet down to the base of the cliff after impact. The 133 passengers and eight crew were killed.

This was the first U.S. team to be invited to China to participate in an accident investigation. For some time, meetings and discussions between NTSB staff and their Chinese counterparts have been underway and the request for Safety Board participation in this investigation shows that efforts to build stronger international ties are meeting with success. NTSB staff continue to work with their Chinese counterparts on the investigation.

On October 5, 1992, a NTSB investigative team was sent to The Netherlands to assist in the investigation of El Al flight 1862, a Boeing 747-200F that crashed into an apartment complex shortly after takeoff at Amsterdam. All three crewmembers, one passenger, and 55 persons on the ground were killed in the crash. The flight data recorder (FDR) was sent to our laboratory for examination, and a NTSB metallurgist assisted in the examination of engine attachment hardware. The FDR data and the examination of the wreckage indicated that the No. 3 engine separated from the airplane

and struck the No. 4 engine, causing it to separate from the airplane. The investigation determined that the No. 3 engine separated because of a failure in midspar pylon attachment fuse pins that secure the engine to the wing.

Following the Safety Board's November 3, 1992, issuance of urgent safety recommendations, the FAA issued Airworthiness Directives regarding replacement and inspection of the fuse pins and the inspection of the midspar fitting lugs on November 13 and December 24, 1992.

On January 15, 1992, Air Canada flight 173, a McDonnell Douglas DC-9, en route from Ontario to Chicago, Illinois experienced "frozen" aileron controls. Attempts to free the aileron controls while airborne were unsuccessful. The captain declared an emergency while in Canadian airspace and made an uneventful landing at Toronto. An inspection of the airplane after landing disclosed a large accretion of ice on the aileron and wing spoiler control.

As a result of this incident, on October 21, 1992, the Board issued a safety recommendation urging the FAA to issue an Airworthiness Directive requiring the installation of safety devices to prevent such accretion in all DC-9 and MD-80 series airplanes. We are awaiting the FAA's reply to this safety recommendation.

General Aviation

In 1992, the Safety Board initiated more than 2,250 general aviation accident investigations from its nine regional offices. Although most of these investigations do not receive as much media attention as those involving major air carriers that are investigated by a "Go Team" from our Washington headquarters, they do have a significant impact on transportation safety.

For example, the Safety Board has investigated several aircraft accidents involving considerable delays in search and rescue (SAR) responses, including a Cessna 210N accident at Shady Grove Corner, Virginia. SAR efforts did not locate the aircraft until seven days after the accident. Problems in charting the last known position of the aircraft were identified in the investigation.

The Board subsequently urged changes in the National Search and Rescue Manual in order to prevent delays and possible unnecessary loss of life in future SAR operations. The Safety Board is pleased to note that the Coast Guard is gathering such data for an upcoming revision in its National Search and Rescue Manual. The Coast Guard expects the revised manual to be published in later Summer 1993.

Currently, the Safety Board is investigating two sky-diving accidents that occurred in 1992 in Perris, California and Hinckley, Illinois. In the Perris accident, the DeHavilland DH-6 crashed shortly after departing the

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runway. The plane carried a pilot and 21 parachutists. The pilot and 15 parachutists were killed, and the other six parachutists received serious injuries.

At Hinckley, Illinois, a Beech 18 carrying a pilot and 11 passengers (four skydiving instructors, four students jumping in tandem rigs, two video cameramen and one solo jumper) crashed and all aboard were killed. A number of issues including plane loading factors are being examined by investigators.

Piper Malibu/Mirage Aircraft

In July the Board completed a special investigation of five fatal in-flight breakups in the U.S. involving Piper PA-46 Malibu/Mirage aircraft, and concluded that the crashes resulted from deficient pilot handling and training. Twelve persons were killed in the five accidents. No inherent deficiencies in the design of the plane was found, nor were defects discovered in the autopilot operations.

As a result of this special investigation, the Board made safety recommendations concerning modifications to the airplane's flight manual and pilot training.

Railroad

The Safety Board performs in-depth analysis of selected rail accidents and initiates safety studies of significant railroad safety issues.

Ninety-six railroad incidents and accidents were investigated by the Safety Board in 1992. "Go Teams" from the Washington headquarters were launched to four of these accidents, while investigators from regional offices investigated the remaining 92.

Indiana Commuter Train Collision

A "Go Team" was dispatched in January 1993 when two Northern Indiana Commuter Transportation District trains collided in Gary, Indiana. Seven passengers sustained fatal injuries, five passengers serious injuries, five crewmembers and 88 passengers minor injuries, and 100 passengers no injuries. One train was crossing over a gantlet bridge when the collision occurred with the oncoming train. The vigilance of the train operators and the preparedness and emergency skills of Gary, Indiana emergency response personnel are issues being examined.

Selected Ongoing Investigations

In June, a Burlington Northern freight train derailed in Superior, Wisconsin. Three of the 14 freight cars that derailed were transporting

hazardous materials; and one car fell into a river and released its product, an aromatic concentrate which included benzene as one of its major constituents. Thousands of nearby residents were evacuated, but no serious injuries resulted.

Issues in the Superior, Wisconsin accident are the U. S. Department of Transportation's oversight of the shipment of environmentally sensitive materials, the adequacy of existing rail inspection methods, and the accident performance of the tank cars.

Two Amtrak derailment investigations were also initiated in 1992. In one investigation (Newport News, Virginia), the FBI was called in when evidence at the scene indicated the derailment may have resulted from deliberate tampering with a switch. Another accident occurred in Stevensville, Michigan, when an Amtrak train derailed where a freight train had collided with an automobile less than an hour earlier. One of the issues being examined in this case is the adequacy of track inspections after a train makes an emergency brake application.

Management Oversight and Worker Training

In December 1990, an Amtrak passenger train derailed and struck a commuter train in Boston's Back Bay Station. On April 12, 1991, an Amtrak train of locomotives only, struck a Conrail freight train at Chase, Maryland. On September 17, 1991, two Norfolk Southern freight trains collided in Knox, Indiana.

In all three of these accident investigations, the quality of supervision and training were cited and safety recommendations were issued to the appropriate parties for improvements in supervision and training programs identified in the reports adopted by the Board. Progress is being made on acceptance of these safety recommendations among the affected parties and the Board's efforts in this area to achieve acceptable responses are continuing.

A New York City Transit Authority (NYCTA) train motorman's alcohol impairment and sleep deprivation were found by the Safety Board to be the probable cause of the August 1991 subway accident that killed five passengers. In the 24 hours before the accident, the train motorman had no more than four and one-quarter hours of sleep, and, based on information the motorman gave the police, the Safety Board determined that his blood alcohol content (BAC) at the time of the accident was between 0.29 percent and 0.36 percent. For comparison purposes, New York commercial drivers license regulations prohibit operation of a motor vehicle with a BAC of 0.04 percent or more. Several safety recommendations to improve supervisor training and the New York City Transit Authority operating rulebook were issued by the Board.

Other Rail Accidents

Reports on several other major rail investigations handled by NTSB staff are expected to be completed in the near future. Final reports are planned soon on the head-on collision of two Burlington Northern freight trains in

Ledger, Montana; the derailment of an Amtrak passenger train near Lugoff, South Carolina; and the derailment of an Amtrak passenger train near Palatka, Florida.

HIGHWAY

The Safety Board is responsible for the investigation of highway accidents, including railroad grade crossing accidents, that it selects in cooperation with the states. The Board devotes its highway resources to those accidents that have a significant impact on the public's confidence in highway safety, that generate high public interest, or that concern technical safety issues that cause or contribute to accidents or injuries on a national scale.

Intercity Buses

On July 26, 1992, a charter bus owned and operated by Sensational Golden Sons Bus Service, Inc. was transporting 49 passengers to an amusement park. As the bus was descending a steep grade in Vernon, New Jersey, the driver lost control of the vehicle. Six passengers were killed, and all other occupants received minor to critical injuries. The Board's investigation is on-going, but we have found that all of the bus' brakes were defective. A two-day public hearing on this matter was held in October in Secaucus, New Jersey. Issues being examined in this investigation include

state and national regulations concerning the certification and inspection requirements of intercity bus companies, and the signing and design of the roadway approaching the accident site.

In a report regarding two accidents involving Greyhound Lines, Inc., the Safety Board urged that the company implement a new driver certification program. The Board determined that both accidents were caused by the company's failure to ensure that bus drivers had adequate training and experience to operate intercity buses. The bus drivers involved in the accidents failed to meet even Greyhound's stated criteria.

Brake Standards for Heavy Trucks

The safety of heavy commercial trucks is an item on the Board's "Most Wanted" list of safety issues. As a result of a safety study based in part on Safety Board investigations into 18 brake-related heavy vehicle accidents that occurred between December 1988 and November 1990, specific improvements in brake standards were recommended.

During this safety study, Safety Board staff and state authorities conducted roadside inspections of heavy trucks along interstate and secondary roads in five states (Florida, Illinois, Oregon, Pennsylvania and Texas). The most common problem identified in the study was out-of adjustment brakes, although other issues such as brake maintenance were addressed. Thirty-five safety recommendations were issued as a result of this study.

Federal accident data indicate that although combination trucks account for only 1.8 percent of all U.S. highway accidents, they are involved in 6.7 percent of all fatal accidents. The number of fatal accidents per 100 million miles for combination trucks is nearly double that of passenger cars. More than 5,000 people are killed every year in the United States in heavy truck accidents.

Work Zones

Based on past Board investigations of 61 accidents that occurred in construction work zones, the Safety Board recommended last May that a new national work zone safety program be developed and that methods for managing traffic at such sites be improved. According to the Board's safety study on highway work zone safety, the number of fatalities that occurred in work zones increased from 489 in 1982 to 780 in 1988. Unless action is taken by federal and state authorities, the number of traffic fatalities that occur at road construction sites can be expected to rise, especially in light of the anticipated increase in construction and maintenance activities in the next few years.

Highway Limited-Visibility

As a result of the investigation of six limited-visibility, chain-reaction collisions since December 1990, and a public hearing into the problem, the Safety Board recommended that a more uniform approach be developed to review and update driver licensing and education materials to

ensure that guidance for limited-visibility driving is uniform and complete. The Board believes such an effort should be a joint federal, state, and industry initiative. The Board also asked the Department of Transportation to include limited-visibility countermeasures in its Intelligent Vehicle Highway System demonstration programs.

Tank Truck Rollovers

One of the four special highway safety studies adopted by the Board last year dealt with hazardous spills from overturned tank trucks. Several accidents that occurred in the first few months of 1991 were examined, and while none of the cargo tanks were breached, gasoline, hydrochloric acid or fuel oil spilled because closures or fittings on top of the cargo tanks were damaged during the accident sequence.

The recommendations issued as a result of this study call on the Research and Special Programs Administration (RSPA) and the Federal Highway Administration (FHWA) to work together to improve the performance of tank truck rollover protection devices. The Safety Board additionally urged FHWA to require that cargo tanks failing to comply with DOT standards either be removed from hazardous materials service or be modified to comply with those standards.

Underage Drinking and Driving

After analyzing a large body of research involving young driver highway accidents and actions to prevent crashes by young drivers, the Safety Board has called for a major reassessment by the states to reduce crashes among drivers under 21, including alcohol-related accidents.

In 1991, more than 9,100 people died in traffic crashes involving more than 8,200 15- to 20-year old drivers. That is more than 22 percent of all fatalities that occurred on our nation's highways in 1991. Moreover, young drivers comprise only 7.1 percent of licensed drivers, but account for 14.9 percent of all driver fatalities according to the latest figures from the National Highway Traffic Safety Administration (NHTSA). Further, while young drivers do only 20 percent of their driving at night, over half of the crash fatalities of adolescent drivers occur during nighttime hours.

Underage drinking and driving continues to play a major role in youth traffic crashes and fatalities. Although no state allows the sale of alcohol to persons under age 21, the Safety Board research found most states still allow a driver under age 21 to legally drive with a substantial amount of alcohol in his or her system.

Several state legislative and policy actions can be effective in reducing automobile crashes involving young drivers and the Safety Board has

recommended that several initiatives be adopted, including the enactment of "zero" Blood Alcohol Content (BAC) laws to make it illegal for drivers under 21 to drive with any blood alcohol concentration.

Marine

In 1992, the Safety Board adopted six major marine accident reports and three major investigations are underway.

The ongoing investigations include two ships (the QUEEN ELIZABETH II and the container ship CHIARA) that ran aground off the coast of Massachusetts. The remaining investigation was initiated last December when the container ship JURAJ DALMATINAC and a barge, DUVAL 2, collided in the Houston ship channel near Galveston, Texas. The channel was blocked for several hours and it was opened for one-way traffic about sixteen hours after the accident.

Escort Vessels

The Safety Board also commented on a Coast Guard Notice of Proposed Rulemaking (NPRM) to implement provisions in the Oil Pollution Act of 1990 requiring escort vessels for single-hulled tankers of over 5,000 tons transporting oil in bulk in Prince William Sound, Alaska (where the EXXON VALDEZ accident occurred), and in Rosario Strait and Puget Sound, Washington. The Board urged improvements in the NPRM to insure that escort vessels have a demonstrated ability to maneuver a loaded tanker underway in a manner sufficient to prevent an accident.

Fishing Vessel Safety

Each year, an estimated 250 fishing vessels are lost and about 100 fishermen die in the commercial fishing industry. The highest loss and fatality rates are for larger vessels, but the fatality rates for vessels under 65 feet long are also extraordinarily high. These are just some reasons why the safety of commercial fishing vessels remains an item on our "Most Wanted" list.

An example of this type of accident was the capsizing and sinking of the 162-foot U.S. Fishing Processing Vessel ALEUTIAN ENTERPRISE in the Bering Sea resulting in the loss of nine lives. As a result of our investigation, we found that the vessel was lacking in watertight doors and hull closures, crew safety equipment and training, and adequate stability information.

The Board reissued several recommendations concerning fishing vessel safety and recommended several new actions to the Coast Guard to correct problems involving watertight doors, load lines, and post-accident toxicological testing requirements.

PIPELINE

The mission of the Safety Board's Pipeline Accident Division is to continually increase public safety by advocating that government, pipeline operators and associations improve their policies, practices and systems.

This is accomplished through the investigation of pipeline accidents that generally involve a fatality, substantial property damage, or significant injury to the environment.

Two major pipeline accidents were investigated by the Board in 1992. The first accident occurred when a low-pressure natural gas system serving a neighborhood of residences and small businesses in Chicago, Illinois, suffered an overpressure. The resulting fires killed four persons. In its final report on the accident, the Board found the failure of the Chicago utility to adequately train its gas operations section employees in recognizing and responding to abnormal situations spawned a sequence of events that resulted in the deaths and extensive property damage.

In the second accident, Board investigators are looking into the explosion of a gas cloud at a salt dome storage cavern in Brenham, Texas on April 7, 1992. The adequacy of federal and state safety controls governing the operation, and maintenance of underground fuel storage facilities are being examined.

Military Gas Pipeline Systems

The Safety Board also determined in 1992 that the 1990 explosion that killed two persons and injured 24 others at Fort Benjamin Harrison, Indiana was caused by the U.S. Army's failure to follow accepted gas pipeline procedures. As a result, a valve into a discontinued but uncapped gas line was inadvertently opened. Among the recommendations issued, the Board said

that the Secretary of the Army should require pipeline systems that are owned or operated by the military to conform to federal civilian safety regulations.

The Board report also examined the gas pipeline operations of the other military service branches and found operations similar to those of the Army. Consequently, the Secretaries of the Navy and the Air Force were urged to evaluate their gas pipeline safety programs to identify and correct any deficiencies.

We were pleased to be advised that the Army has updated its guidance document for the operation and maintenance of gas systems. The updated manual has been forwarded to all Army installations, and coordination is ongoing with the Navy and Air Force to publish the manual as a Department of Defense Tri-Service Manual.

Excess Flow Valves

As this Committee knows, the Safety Board has advocated the use of excess flow valves since 1971. Excess flow valves are an item on the Board's "Most Wanted" list. The devices, which have been commercially available for about 30 years, can automatically protect against gas flow in excess of that required by normal customer demands when they are installed in the service line at or near its connection to a gas main. An Advance Notice of Proposed Rulemaking on this matter has languished at DOT and the agency has taken no concrete action to require this important safety protection. We are pleased

that the 102nd Congress addressed this matter with the enactment of the Pipeline Safety Act, which calls upon DOT to either mandate excess flow valves or explain why it has chosen not to require these recognized safety devices.

Hazardous Materials Transportation

About four billion tons of regulated hazardous materials are shipped each year, with more than 250,000 shipments of hazardous materials entering U.S. transportation system daily. The Board's role is to investigate accidents that occur during the transportation of the materials, or that result in or threaten deaths, serious injuries, or major disruptions within communities caused by the release of hazardous materials.

As mentioned earlier, the Board is currently investigating a Burlington Northern train derailment that occurred in June 1992 near Superior, Wisconsin. Three of the fourteen derailed cars contained hazardous materials and one of these was carrying more than 26,000 gallons of benzene. This car was breached, resulting in the release of more than 20,000 gallons of product. Rising temperatures and prevailing winds generated a massive cloud of vapor fumes of the Superior, Wisconsin/Duluth, Minnesota area. During a 16-hour period, local officials evacuated approximately 40,000 residents.

The safe transport of hazardous materials has been a concern of the Board for some time. As mentioned earlier in my testimony, the Board has placed strong emphasis on the need to enhance highway trucking safety especially when dangerous materials are being carried.

The same is true for rail tank cars. Just this past December, the Safety Board issued a series of recommendations calling for better federal testing and inspection requirements for rail tank cars and their components. These recommendations add to those issued in the past.

The Board found that DOT tank car inspection and testing regulations, which cover all of the nearly 104,000 tank cars used to carry hazardous materials in the nation, are ineffective for finding certain types of major structural flaws. The findings were based on a special investigation of two rail tank car accidents in 1992, one of which resulted in the sudden release of 30,000 gallons of liquified petroleum gas. The Board issued a series of recommendations calling for better federal testing and inspection requirements for the cars and their components.

State and Local Initiatives

There are a number of safety recommendations that have involved the Safety Board in issues important to state and local governments. The Board has encouraged adoption of its recommendations by testifying before state legislative bodies, and by disseminating accident investigation findings and reports to state and local authorities. Among the issues addressed are

recommendations that states enact administrative license revocation for drunk drivers, mandatory safety belt use laws, boating while intoxicated laws, and flying while intoxicated laws.

Likewise, the Board has recommended that states undertake safety oversight of rail rapid transit systems and improve anti-drunk driving programs. These efforts continue.

The Board is encouraged by the states' response to our recommendations. Administrative license revocation laws were passed in Nebraska, New Hampshire and Ohio in 1992, bringing the total to 32 states. The National Highway Traffic Safety Administration and the Safety Board participate in a national coalition of more than 30 government and private groups working for enactment of these types of laws in all states.

Five states have adopted mandatory safety belt laws since the Board issued its safety recommendation, leaving only eight states that do not require occupants of cars, vans and light trucks to wear their seatbelts.

Since the Board's 1983 boating while intoxicated recommendation, the number of states with comprehensive boating while intoxicated laws has increased from three to 39. The responses from governors to the 1992 study on flying while intoxicated has also been encouraging.

Conclusion

Just as challenges have been confronted by the Board in its first 25 years, so too will the upcoming challenges of the next be met. The introduction of high speed trains in the United States, the development of new composite materials, the advent of intelligent highways, and the development of new transportation technologies will place demands on those in government working to help insure safe transportation systems.

Our responsibility must be to maintain the highest level of technical competence and expertise in these fields in order to respond effectively when accidents occur and to develop sound proposals to prevent their recurrence. The Safety Board is committed to this goal, as is this panel, and I look forward to working with you to help insure a safe national transportation network.

That concludes my formal statement. The staff and I would be pleased to respond to any questions.



THE NATIONAL TRANSPORTATION SAFETY BOARD

MOST WANTED

Transportation Safety Improvements

"... a program to increase the public's awareness of, and support for, action to adopt safety steps that can help prevent accidents and save lives."

Boating While Intoxicated

- Strengthen Enforcement and Toxicological Testing Programs to Prevent Boating Accidents

Action Needed by State Legislatures

Administrative Revocation of Driver's License

- Pull Driver's License on the Spot of Anyone Failing or Refusing a Chemical Test for Alcohol

Action Needed by State Legislatures

Airport Runway Incursion

- Provide Safer Control of Aircraft on the Ground

Action Needed by the Federal Aviation Administration (FAA)

Positive Train Separation

- Require a Railroad Collision Avoidance System

Action Needed by the Federal Railroad Administration (FRA) and the Railroad Industry

Mode C Intruder Conflict Alert in Terminal Areas

- Install Collision Avoidance Systems for Airport Terminal Areas

Action Needed by the Federal Aviation Administration (FAA)

Fishing Vessel Safety

- Require Basic Lifesaving Equipment for Commercial Fishing Vessels

Action Needed by the United States Coast Guard (USCG)

Mandatory Seatbelt Use Laws

- Require Occupants of Cars, Vans, and Light Trucks to Use Lap/Shoulder Belts

Action Needed by State Legislatures

Adjustable Upper Anchor Point For Lap/Shoulder Automobile Seatbelts

- Increase Seatbelt Use and Effectiveness

Action Needed by Automobile Manufacturers

Railroad Hazardous Materials Tank Cars

- Require Improved Protection of Railroad Tank Cars Carrying Hazardous Materials

Action Needed by the Research and Special Programs Administration (RSPA) and the Federal Railroad Administration (FRA)

Human Fatigue in Transportation Operations

- Study the Relationship of Fatigue and Work/Rest Cycles in the Transportation Industry and Update Applicable Regulations

Action Needed by the Department of Transportation (DOT)

School Bus Safety

- Safer Transportation for Schoolchildren

Action Needed by the National Highway Traffic Safety Administration (NHTSA)

Structural Fatigue Testing of Aircraft

- Require Testing of Aircraft to the Equivalent of Two Lifetimes of Use

Action Needed by the Federal Aviation Administration (FAA)

Passenger Vessel Safety

- Upgrade Fire Detection and Control, Crew Communications and Training on Passenger Cruise Vessels

Action Needed by the United States Coast Guard (USCG)

Alcohol/Drug Detection

- Require Uniform Collection, Handling, Processing, and Testing for Alcohol and Other Drugs

Action Needed by the Department of Transportation (DOT)

Brake Wear on Transport Airplanes

- Require Improved Braking for Transport Category Airplanes

Action Needed by the Federal Aviation Administration (FAA)

Heavy Commercial Truck Safety

- Improve Prevention of Accidents Caused by Fatigue, Alcohol, Drug Use, and Medical Problems

Action Needed by the Federal Highway Administration (FHWA) and the States

Pipeline Excess Flow Valves

- Require the Installation of Excess Flow Valves in High Pressure Residential Natural Gas Distribution Systems

Action Needed by the Research and Special Programs Administration (RSPA) and the American Gas Association

MAJOR INVESTIGATIONS

Mr. CARR. Chairman Vogt, would you go over the highlights of the major accident investigations over the past year?

AVIATION

Mr. VOGT. In each of our operations we have had some highlights. I would start with our aviation investigations.

One of the things that has come very much to the foreground in the past year—we have seen it evolving for a period of time—is our emphasis on international investigations. Under the ICAO treaty, we are the lead U.S. representative in international investigations for U.S. manufacturers, for the FAA, and for all interest groups here when U.S. technology is involved in a foreign accident. So we find that we are committing more and more of our time to accidents abroad.

One in which our equipment was not involved was the A-320 crash at Strasbourg where we requested and were given participation rights in the accident. We are finding that any accident anywhere in the world is important to our work. And we see that only expanding—the exponential expansion of transportation activity, for example, in the third world—is going to be very important.

Aviation products are also our largest export items, our largest hard-dollar value exports. Our activities are important in that regard.

I think the USAir 405 crash in New York is very important, of course, because of the icing implications. We have had a full year of activity on local and general aviation investigations out of our field offices.

If you were asking for highlights, I would have to say that probably USAir 405 and our international operations would be at the top of the list in my judgment.

MARINE

In marine, one of the first things I set out to do was to try to develop a better working relationship with the Coast Guard. I think we have seen a lot of progress in that area. We have been involved in the last three passenger vessel investigations that were carried out by the Coast Guard.

That working relationship, as it is developing—for example, in the case of the QE2—is something that I consider to be a highlight. We just recently had a barge collision in the Houston ship channel, and we were involved there.

We think that this relationship is going to develop in a very positive way. We are hopeful. I am not going to consider that off the top of the docket until we see it done, but we certainly see a willingness on the part of the Coast Guard to work with us.

RAILROAD

In railroad, we have had a series of accidents. Several have involved Amtrak. The top of our list continues to be grade crossing accidents. Every year, year in and year out, grade crossing acci-

dents produce more fatalities than any other single aspect of rail passenger and freight transportation.

There have been some ongoing developments in the area of positive train separation, at least in the sense that the parties are all actively engaged in a dialogue as to what will be the best way to initiate the train control system. As you may know, the Burlington Northern developed the so-called Ares system that was dependent upon satellites.

We think the FRA and the industry have moved away from that toward ground-based electronic separation devices, and we are encouraged that they are working on that.

Hazardous materials spills from railway tank cars remain a concern. One in Wisconsin involved a tank car that fell off a bridge. There was loss of hazardous materials, including benzene, into the river, and an evacuation of the population in the immediate area was initiated. So we are very interested in pursuing research on non-destructive testing of the integrity of rail tank cars. We are also working on rollover protection matters for rail tank cars. We think the hazardous material area is one that needs our special attention.

HIGHWAY

In highway, the Board adopted the report of the low-visibility accident involving a large number of cars in a collision in Tennessee in a fog-bound area. We made recommendations which we hope will result in some new technology and ways in which to deal with this very perplexing problem that happens quite often in some known fog-prone areas in California and in the Appalachian region.

The Europeans are way ahead of us in that regard and we are asking that there be some investigation into how to better advise drivers that they need to proceed at a uniform speed through such areas by employing electronic sensing devices and electronic signage. This is a very difficult problem and one that is top priority.

I would say at the very top of our list in all categories is alcohol and alcohol involvement. We had less than 40,000 killed on the highways last year, but about 40 percent of those fatalities involved alcohol. As you mentioned in your opening remarks, we have just come out with a study involving teenagers and alcohol. The administrative revocation of drivers licenses and things of that nature also directly go to the question of alcohol and transportation.

ALCOHOL/AVIATION

We also completed a study on alcohol and general aviation. Alcohol seems to be the single across-the-board ingredient, certainly on the ground, that causes most of our fatalities.

Those are just some of the highlights, as I see them. There are a lot more.

Mr. CARR. Thank you, Mr. Chairman.

DEICING

A couple of things come to mind from your remarks that I would like you to expand on a bit. The first is the USAir aircraft crash.

It seems that we're getting more information and yet more problems with deicing. I thought that the experience with Air Florida and the 14th Street bridge would have solved a lot of those problems, but apparently we haven't made that much progress. Is that the case?

Mr. VOGT. I think we are in the middle of some very significant progress right now.

We are impressed and generally pleased with the FAA's interim final regulations on deicing, which went into effect in November of last year. The rulemaking is open for comments until April 15th of this year, but we like what we see so far. The requirements were for each air carrier to develop an approved deicing plan, which has been in effect for this winter season. So we have a ready-made laboratory to see how well it has worked. So far, it appears to be working quite well.

We have some concerns that it doesn't apply to the 135 carriers, the commuter community.

Most of the icing accidents historically have involved so-called hard-wing aircraft. The Air Florida accident was not especially a wing icing problem as it was an icing of sensors. Although there was evidence of a pitch-up in the airplane to indicate that there was wing icing—a characteristic of the 737—that crash was basically caused by a freeze-up of certain engine indicator sensors that gave the pilots what they thought was a false reading.

So when we are looking at wing icing, the accidents have occurred primarily—and I think there have been six in the United States in the last 10 years—on airplanes with swept wings without leading edge lift augmentation devices. One of our recommendations out of the 405 accident was that there be further research into the susceptibility of these hard wing aircraft and ways in which that susceptibility can be dealt with in icing conditions.

The coordination that we have seen this winter season between the air traffic control, the local control, and the airlines themselves has been very impressive in reducing gate delay times and in giving pilots hard information which they can use in making decisions as to whether or not they should proceed in icing conditions, depending upon when they were deiced and the types of fluids used to deice.

So at least for right now, we are encouraged that this problem is finally being substantively addressed.

GRADE CROSSING ACCIDENTS

Mr. CARR. Regarding your comments about grade crossings, I think we all feel this. I know in my own district an entire family was wiped out at a local grade crossing accident just recently. This was after several people have been killed at similar grade crossings in a fairly narrow area in my district, and at a time when the railroad in question was supposedly responding by putting in some signals and some other equipment which had not been installed yet.

We had an interesting hearing yesterday on high speed rail. My own sense is that we don't have enough money to make high speed rail a reality any time soon other than in the Northeast Corridor. However, I think that it's clear for operational efficiencies that we

are going to make an effort over the next 10 or 20 years to increase the speed of trains throughout America, not just on high speed corridors. We have to watch the safety implications of that.

But there isn't enough money in the world to make a grade separation everywhere. There needs to be. So the question is what technology and what operational procedures, short of spending a gigantic amount of money, are going to make grade crossings safe? Is there anything promising in terms of potential new technology and some kind of barrier that might be more fool-proof than the crossing gates? People regularly evade the crossing gates. Is there something else that is going to keep a car off the track?

Mr. VOGT. I wish I had the answer for you on that. We all do.

I am not aware of any super technology at this point. I may turn to my staff.

Barry?

Mr. SWEEDLER. Mr. Chairman, there are a number of things that are being done, as I am sure you are well aware.

The corridor approach is one to look at a whole stretch of track or through a town. There may be ways to beef up the warning and protection systems at certain crossings, close others so that the resources can be concentrated. There are techniques that are being used in Europe with full gates. As you mentioned, with the automatic gates and lights, more than half the fatalities are at crossings that have those warning systems. So certainly more research needs to be done to improve those systems. Full gates that are used in Europe is one thing, but I think the corridor approach at this point is the best way to go. The FRA has funded a number of those corridors.

Mr. CARR. That will cost a huge amount of money. Perhaps you could look into this along the way and advise this Committee because it really does have an economic impact. It is not only lives, but also it is money. To bring it right down to this Committee, it is budget authority and a 602(b) allocation.

We're going to be under a lot of pressure to put grade separations in and to do realignments of tracks. Some of that we need to do anyway, but there isn't enough budget authority. There isn't enough money in the Federal Government to do all that is needed to be done.

It occurs to me, just as an average motorist, that one of the problems with the signals that we currently have has to do with reliability. When that gate is down—and I do the right thing and I stop—and 15 minutes later not a train has passed and the gate is still down. The most safety-conscious person is going to attempt to get across the track thinking that something is wrong with the signal, or that somehow or other a train that is not moving is sitting on the actuator. Then about the time you go across—wham.

I think to some extent we need to examine this question of faulty signals that result when signals appear to be operating improperly.

We are moving very rapidly into this area of IVHS. I am wondering what we can do relative to IVHS technology that can be applied to railroad technology so that you can get a positive indication of where the train is, what direction it is coming from, and how many minutes it will be until it gets there. That is technologically possible.

Mr. VOGT. And it could be also with a positive train separation system where you have precise knowledge of where the train is on the tracks whether it is satellite based or based on transponders in the road bed. That technology is some time away from implementation. However the technology exists.

But if you know precisely where the train is, and tie that into the signal, then the signals operate at the appropriate time.

Mr. CARR. How do the signals operate today?

Mr. VOGT. I am not sure.

Mr. CARR. How does the crossing signal operate today?

Mr. LOEB. They operate in a variety of ways. Some are obviously triggered by sensors that are up-track which sends a signal to the signal system as the train approaches. Some are done with photo-optical cells. There are a variety of ways.

I think the chairman was correct, though. I think in the long-run the way to handle this is a combination of IVHS and positive train separation. I don't know how feasible the Ares system is with the system that is now being approached by the AAR and the FRA with the ground-based transponders.

One of the reasons is a high dependence on signal systems. And as we know, a lot of these grade crossings occur in areas of track where there is no signal system whatsoever, so you don't have the advantage of signalized track territory to help you provide the information to the highway portion of the system.

We, by the way, will probably propose to the Board undertaking another grade crossing study. We did two grade crossing studies in the mid-1980s, one that involved Amtrak trains because we were especially concerned about passenger train accidents at grade crossings. But we are looking into the possibility now of proposing a new study that would examine new technology.

I think the best thing to do right now is to try to provide a constant warning time and eliminate the failures that occur that tend to encourage people to abuse the system.

GRADE CROSSING FATALITIES

Mr. CARR. How many people were killed and/or injured in grade crossing accidents?

Mr. LOEB. There were 600 fatalities, but I don't know how many injuries.

Mr. SWEEDLER. Obviously, it is still the biggest problem in railroad safety.

Mr. REAGLE. Mr. Chairman, if we draw an analogy between the issue of drunk driving, safety belt use, and grade crossings, they are all highway safety issues. It seems to me what we have learned from alcohol and safety belt use is that it takes countermeasures—obviously, the kind we have discussed this morning—but it also takes public information and education of the public. In my view, that is the way we decreased alcohol-related fatalities and the way we increased safety belt use. It seems to me that that is what Operation Lifesaver attempts to do.

I think those kinds of programs are effective.

Mr. CARR. In last year's FRA hearing, they provided statistics showing that accidents are actually less than half of what they

were in 1975. However, fatalities are only slightly down. In 1975, fatalities were 917; in 1976, 1,114; in 1977, 992; it looks as if fatalities were running at about 1,000 through 1978; then the numbers start to trail off to the 800 to 700 range. By 1981, fatalities were down to 607 and by 1982 to 575, which was the low water mark. Then the number of fatalities varied in that range until 1987 when they started to increase.

The number of injuries, apparently varies. Injuries appear to be slightly lower than fatalities, but not by a dramatic amount.

Mr. SWEEDLER. Exposure is way up, too. So the rate is actually even more impressive as far as the actual number of accidents.

Mr. CARR. We will get into this with FRA, but your advice and counsel would be most helpful. I encourage you to continue to pursue it, and to look into the connections between IVHS and what opportunities there are that we haven't had in the past to give motorists more information about where that train is and how fast that train is coming and how much time they really have before they are about to see it. If motorists gain a better understanding of the technology and its reliability, I think we could get the information to the driver of how much of a delay there is going to be.

They don't know whether it is a five-car Amtrak, or if it is a 120-car unit train. At that point, their incentives to try to evade whatever is there can dramatically change.

Mr. VOGT. I think if we ever have the ability to do that, it is going to come through electronics, IVHS and positive separation technology.

Mr. CARR. We learned yesterday in our hearing that one of the big impediments to the high speed rail movement in the country—aside from money—is another money-related issue of liability. There was a discussion between Graham Claytor and Mr. Harper of the Association of American Railroads about Amtrak's ability to operate at higher speeds over freight railway lines and who has the liability for that.

Again, some work in the grade crossing area by NTSB could perhaps pay some rich dividends not only in the saving of lives and the saving of money to this committee, but perhaps in encouraging overall economic efficiency by increasing your rail speeds in a safe manner.

BOGUS AIRCRAFT PARTS

Mr. CARR. I have a couple of questions that relate to your relationship with other agencies. I am trying now to figure out where the boundary is.

You mentioned that you were working cooperatively with the Coast Guard. We won't go over that. But we just had testimony by the Inspector General regarding bogus aircraft parts. In fact, they have extended their investigation into other things such as replacement parts in bridges, which apparently are not meeting the original specifications.

Is the NTSB doing something in this area? Where is the boundary between what the IG is doing and what you're doing? Are you cooperating? Do we have any overlap here?

Mr. VOGT. What we do, Mr. Chairman, as you know, is investigate accidents. Our starting point, when it comes to the question of bogus parts or unauthorized parts really goes to our accident investigations and the extent to which the parts have or have not been involved as causal factors.

In general aviation, we have found some accidents where unauthorized parts—not counterfeit parts—were involved in the cause of accidents. For example, we had one where an oil filter had been purchased at a local hardware store and was used in an engine that developed an oil leak and resulted in a crash. There was another with cotter pins, and things of that nature.

In major transport aircraft, we have not found any causal connection between unauthorized or bogus parts.

We have worked with the Inspector General at DOT. In fact, we have offered the use of some of our lab facilities to that office in its work. They have taken advantage of the offer and we are very interested in what they are doing. I know the IG's office is concerned about bogus or counterfeit parts in the aviation industry.

We think that anything with potential for disruption is important to pursue, but our experience has not involved it as yet.

HIGHWAY ACCIDENTS

Mr. CARR. How about with National Highway Traffic Safety Administration on the highway side of things? Where is the line of demarcation? You have made a rather sweeping proposal with regard to youth drivers. That may be as a result of a few accidents that you investigated, but principally it seems to me that your agency doesn't really focus itself on highway accidents. That is NHTSA. I am not quarreling with your recommendations, but why did you get into that area?

Mr. VOGT. We investigate highway accidents on a selective basis. We are bound by law to investigate all aviation accidents. But we are also obligated to investigate those surface accidents which we think have the greatest implication for transportation safety.

In the case of alcohol, just by way of example, the facts are just overwhelming that alcohol involvement in automobiles and in all modes of surface transportation—including, I might add, recreational boating—is identified directly with accidents and with fatalities. So with that as a starting point, we believe that that is fair game for us to investigate.

As far as I know, we do not have such an empirical database to go forward on an investigation of bogus parts and bridge construction, for example. We don't just look for a windmill to tilt with. We have to have some basis to believe that there is a database that convinces us there is a problem before we can address it.

Hypothetically, if there should be empirical evidence that there is a real problem in bridges, perhaps we could look into it. But I don't see that on our scope right now.

Mr. CARR. Relative to your investigations of auto accidents, I am wondering if you have worked with the folks at the Ryder Trauma Center in Miami.

Mr. VOGT. I am not aware of that.

Mr. CARR. I recommend that you get in touch with them. Chairman Lehman, my predecessor, had a great deal of interest in trauma as part of the transportation problem. He was a supporter of a trauma center that was put at the University of Miami.

I was privileged recently to have a briefing by those folks down there. There is a person who is on their staff who does accident reconstruction. He is a miniature NTSB for autos. They take the trauma they find in the emergency room there and send out this fellow to investigate the accident with full forensic backup. He has some of his own fairly interesting findings.

I know that he communicates his results with NHTSA. Perhaps he ought to at the same time copy you on his findings so that your folks can learn as well. That is a database.

Mr. VOGT. Right.

Mr. CARR. I have many more questions, but I notice that several of my colleagues are here.

Mr. Coleman, do you have some questions?

RESPONSES TO RECOMMENDATIONS

Mr. COLEMAN. Thank you, Mr. Chairman.

I am trying to learn the process. I noticed in your testimony that you highlight the fact that you make recommendations to the FAA on aviation safety issues.

How long does it take to hear back from the FAA about your recommendations?

Mr. VOGT. They are required to respond within 90 days. The FAA is pretty good about that. Some of the others are not as good.

Mr. COLEMAN. Which others?

Mr. VOGT. Maritime has been slow in the past, for example. We're working on that.

Mr. COLEMAN. Do they have the same legal requirement?

Mr. VOGT. Yes.

Mr. COLEMAN. Who else?

Mr. VOGT. The FRA has been pretty good. George, you tell me if that is not right, but I think they have been relatively good.

Barry?

Mr. SWEEDLER. As the chairman mentioned, the FAA has been about the best. They have come in at about 75 days over the last 3 or 4 years.

Mr. COLEMAN. When you make the recommendation, they get back to you with a response?

Mr. SWEEDLER. With a substantive response. It has to be more than just a thank you for the recommendation. They have to get back to us with what they plan to do or not do and with the reasons and rationale.

The United States Coast Guard, since 1988, has taken 266 days for first response. All the other agencies are in between. Most come in at about 100 to 110 days. Railroad is about 200 days. But the FAA is the one that really does the best job.

Mr. COLEMAN. Do those who take longer ever give you any reasons that it takes longer than 90 days?

Mr. VOGT. Normally, we keep after them when they are not forthcoming with a reason for the delay, particularly when we see a history of delays.

Mr. COLEMAN. Do you think we might need some additional legislation in the area to deal with slow responses?

Mr. VOGT. Mr. Reagle is the head of our surface group.

Mr. REAGLE. Mr. Coleman, let me respond to the Coast Guard, which Mr. Sweedler just commented on. Their record is certainly not what we want it to be.

Their goal now is to get their initial response down to 90 days. We are very pleased with that and we think they're moving in the right direction. Obviously, only time will tell.

Mr. VOGT. I would make one comment, Mr. Coleman.

A lot of this data is historical. I think it is fair to say that in the last few years we have seen improvements in all these response times. When I came to the Board, we had modal administrators, and as you know, there are currently none in those jobs. We are expecting them to come in. I think the relationships between this agency, our staff and their staffs, has probably been by everybody's account at a high mark. It has been evolving that way over a period of time.

So we are very hopeful that we can work together to cut these times down. That is not to say that we wouldn't like you to lean on them a little bit for us.

But is legislation necessary? I would like to answer that question next year rather than at this time because I am hopeful that it won't be.

SCHOOL BUS SAFETY RECOMMENDATIONS

Mr. COLEMAN. You mentioned recommendations with respect to school bus safety.

Mr. VOGT. Yes, sir.

Mr. COLEMAN. What has been the response with respect to those recommendations?

Mr. VOGT. We're very encouraged right now because there is a rulemaking that has just been finalized having to do with exits in school buses, which has been consonant with our recommendations over some time that the numbers of exits should correspond to the passenger capacity of the school bus.

Also, an important recent decision has been that safety doors stay open so that they don't close in a crash situation.

Two items that are still pending that we want and have not yet achieved are greater fuel tank integrity on school buses and the flammability of materials that are used inside the school buses.

So recently there has been substantial advancement in terms of our interests and recommendations on school bus safety.

Mr. COLEMAN. To whom do you make these recommendations? To the manufacturers? To the States? To the local governments?

Mr. VOGT. No, this was to the National Highway Transportation Safety Administration, NHTSA, which has jurisdiction. It is their rulemakings to which I referred that require school bus manufacturers to meet certain requirements. Substantial progress has been made there.

Mr. COLEMAN. Do you involve yourself in that relationship between them and any State laws?

Mr. VOGT. We make recommendations to the Federal agencies and to the States as well. We monitor both of those and their responses.

Mr. COLEMAN. For the record, could you give us a summary of the State's responses?

Mr. VOGT. Certainly. I would be happy to do that.

Mr. COLEMAN. Provide for the record a summary of the State's responses to NTSB recommendations.

[The information follows:]

In the past 25 years, the Safety Board has published 29 accident reports and 4 safety studies which involved school bus safety issues. These documents contained 45 safety recommendations addressed to one or more states. The recommendations issued to the various states address issues ranging from driver use of seatbelts, to the mechanical condition of the buses, driver training programs, pre-employment screening of applicants, age limits on drivers, and training for school bus mechanics. We have generally received excellent responses from the states.

We have found the school bus safety issue to be of great concern to the states and to the county school boards. Some of our more controversial recommendations on this issue are those relating to the removal of pre-1977 school buses from any service, and the use of trained drivers for school bus type vehicles used as activity buses outside of school hours.

A compilation of the responses of each of the individual states to the 45 safety recommendations would be voluminous. We can state that because of the Board's safety recommendation, the involvement of the National Highway Traffic Safety Administration, and the positive response of the states, the accidents, injuries, and fatalities to pupils being transported by school bus (whether to and from school or to after-school activities) are much fewer in number than they were 25 years ago.

MANDATORY SEAT BELT LAWS

Mr. COLEMAN. I also noticed in your "Most Wanted" list in your testimony that you discussed the issue of the mandatory seat belt use laws. Is there deficiency in that area?

Mr. VOGT. Yes. Mandatory seat belt use laws are a very high priority. Many of our high priority items are on that "Most Wanted" list. We are very active in pursuing State Legislatures to implement mandatory use laws. The correlation between the use of shoulder/lap belts and crash safety is just without question.

Mr. COLEMAN. I agree with you. I was not unaware that we had States that were not in compliance.

Mr. VOGT. George might be able to elaborate on that.

Mr. REAGLE. I think there are eight States right now, Mr. Coleman, that don't have that requirement. I think it is important to also point out that the States' laws aren't uniform, so you have some difference among the States with respect to coverage.

Mr. COLEMAN. These days, it seems to be the younger generation that takes it as a given that seat belt use is what you do when you get into a vehicle. It is our generation that was not used to it. It seems to me, however, that it has become an acceptance. I think the information is compelling and overwhelming. I would happen to agree.

It seems to me that we need to have some Federal statement with respect to those States that are not in compliance with the mandatory seat belt law. I am surprised that we have let that get through.

Mr. VOGT. It is surprising also to me that there are large numbers of people in all States who don't use their seat and lap belts. George?

Mr. REAGLE. The National Highway Traffic Safety Administration maintains a sensing poll of what usage rates are. Right now, I think those usage rates are only about 61 percent.

Mr. VOGT. And we have the problem in commercial trucks, also. It is hard to believe that somebody wouldn't put a belt on.

Mr. LOEB. I think it is also important to point out that most State laws do not cover heavy truck drivers, so you often don't have a mandatory use requirement for the drivers of heavy trucks to use them. We have addressed both issues.

In fact, the Safety Board initially did not address the issue of mandatory use laws because we were so certain that all 50 States would pick this up rapidly. It was about a year and a half ago when we first addressed our recommendation on this to the States because we became very concerned that 8 or 9 States at that time had not implemented mandatory use laws.

Also at that same time, we recognized that there were a lot of exemptions in the mandatory use laws, for example, truck drivers. So we made recommendations to the States on that as well.

AIR BAG SAFETY AND PASSIVE RESTRAINTS

Mr. COLEMAN. What about the air bag safety issue? I will just tell you as a consumer viewing that issue, I became convinced a long time ago that that concept was a good idea if the technology is available, and yet there have been some reports that it is not all that it is cracked up to be or what we wanted it to be.

I was curious about those because it would seem to me that in addition to the seat belt and shoulder belt safety devices, not much else would be lost, even if it was not all that effective.

I always read reports where they were very effective for the most part. Maybe you have some studies that could help us.

Mr. VOGT. It is interesting—and I am going to turn to Mr. Reagle here on this—that when you consider driver decisions in safety, the air bag is a purchase decision, not a use decision. So when you purchase a car with air bags, it is there. There is no decision each time to use it or not. The compounding problem, as we said earlier in the seat belt laws, is that even in States where seat belts are mandatory we find that a high percentage of people don't use them.

I am not aware of anything that we have done on air bags. George?

Mr. REAGLE. We have a study underway right now, Mr. Coleman, to look at some 50 accidents involving passive restraints. That would be passive belts as well as air bags. We have done the data collection part and are in the analytical stage right now.

But both from my experience at the Board and my previous experience at NHTSA, I think we have seen that the air bag technology is a good thing. Like any implementing technology, there are some start-up problems, but generally we see that air bags save lives.

Mr. COLEMAN. I was also going to say that I was interested that the automobile industry itself was forced to the issue. Yet I noticed

a couple of years ago that the Chrysler Corporation made it a part of their advertising campaign.

Mr. VOGT. It is hard to sell a car now without them.

Mr. COLEMAN. That's right.

Mr. VOGT. One other point on which I would like Mr. Reagle to elaborate on concerns passive restraints in some cars. When you get in the car, your shoulder belt automatically is engaged, but the lap belt is not. The consequences of not using the lap belt in conjunction with that shoulder belt are very disturbing.

Mr. REAGLE. We have seen some accidents—and I hate to bring this up—where people have been decapitated because of the upper torso belt. I think one of the things we are seeing in the study, and which we need to look at further, is the use of the manual lap belt.

Mr. COLEMAN. Thank you.

Thank you, Mr. Chairman.

Mr. CARR. Mr. Wolf?

BLOOD ALCOHOL LEVELS

Mr. WOLF. Thank you, Mr. Chairman.

Welcome to the hearing.

On that last comment on decapitation, I think if that were common knowledge that would certainly go a long way toward educating people and getting them interested in it.

What States have acted on a 0.0 percent tolerance? Is your theory on the 0.0 percent tolerance for people under 21 that it is against the law to drink under 21 and to purchase alcohol under 21 so therefore there ought to be a 0.0 percent tolerance for people under 21?

Mr. VOGT. In our study—and I will turn to Mr. Sweedler, our expert on alcohol and accident prevention and godfather of this study. Access to alcohol by teenagers in most States, particularly the District of Columbia, is very easy. There was a study done in which the same teenager went into a whole series of liquor stores. Barry can give you the statistics on that, but it was incredible how easy it is for teenagers to buy alcohol. Many States do not have laws that relate to possession by teenagers. The laws relate to the sale. So we're encouraging States to adopt possession laws.

Part of our recommendation is that the blood alcohol level be 0.0 percent for novice drivers.

Mr. WOLF. Is that definition from 18 to 21?

Mr. VOGT. Yes. Under 21.

We also have some curfew provisions relating to first-year drivers, particularly between the hours of midnight and 5:00 a.m. I don't know if you read the article in the Washington Post, but I have been told that I am very unpopular with some of my friends' teenage children.

Mr. WOLF. In fact, I was in a high school a couple of days after that and the issue came up.

Obviously, raising the drinking age to 21 was very unpopular but yet it was a very positive thing, too.

Mr. VOGT. It was enormously positive. We like to think it was a direct result of an NTSB initiative in which Mr. Sweedler was very much involved.

Again, as I mentioned earlier, the relationship between alcohol and accidents and fatalities on our roads in every mode, and in recreational boating as well, is direct. Anything we can do to inhibit that will save lives.

Mr. SWEEDLER. We have about 12 million drivers under the age of 21. They make up about 7 percent of the Nation's drivers, but result in 15 percent of the fatalities. More than 9,000 people died in 1991 in which the driver was 15 to 20. So it is one of the most serious transportation safety problems that we have. One person every 57 minutes dies at the hands of a 15-year-old to 20-year-old. That is 22 percent of all highway fatalities.

So it is obvious that we really need to address this issue.

Mr. WOLF. Have any States taken your advice?

Mr. SWEEDLER. Yes. Some of the States—15 States have some form of lower blood alcohol for youth.

Mr. WOLF. Could you supply for the record which States?

Mr. SWEEDLER. Yes.

[The information follows:]

STATES WITH BAC LEVELS LOWER FOR UNDERAGE DRIVERS THAN THE BAC LEVEL
SPECIFIED FOR DRIVERS OVER 21

0.00 BAC

Arizona (under 21), North Carolina (under 19), Oregon (under 21), Utah (under 21), Wisconsin (under 18).

0.01 BAC

New Jersey (under 21).

0.02 BAC

Maine (under 21), Maryland (under 21), Ohio (under 18), Vermont (under 18).

0.04 BAC

Rhode Island (under 21), New Hampshire (under 21).

0.05 BAC

California (under 18), New Mexico (under 18).

0.06 BAC

Georgia (under 18).

STATE BLOOD ALCOHOL LEVELS

Mr. WOLF. Could you tell us publicly now which States are doing the worst job?

Mr. VOGT. The District of Columbia is doing the worst job.

Mr. WOLF. There has been a history there on the 21 drinking age. The bars up in Georgetown were particularly effective in lobbying against it. But in addition to the District doing a very, very poor job, who else is doing the worst job?

Mr. SWEEDLER. I would rather talk about the States that are doing a good job.

Mr. VOGT. I can tell you some that are doing a bad job.

Delaware, Florida, Montana, New Hampshire, New York—all those are at the bottom of our list—West Virginia and the District are doing particularly bad jobs.

Mr. WOLF. Virginia is doing a bad job?

Mr. VOGT. West Virginia.

Mr. WOLF. How is the State of Virginia doing?

Mr. VOGT. I don't know the answer to that.

Mr. SWEEDLER. I would say moderate. They do not have a lower BAC; they do not have the night-time driving restriction, their age 21 law is in the middle range.

Mr. WOLF. That is partially because a lot of the members are defense lawyers who serve sometimes in these jobs and don't want to do very much about it.

I think that information would be very useful for the committee. In particular, I would appreciate it if you would tell me how Virginia is doing so that I can transfer that on the Governor and let him know.

Mr. VOGT. We would be pleased to do that.

UNDERAGE DRINKING LAWS

Mr. WOLF. Provide for the record which States are doing the best and worst jobs concerning adoption of your recommendations concerning youth under age 21.

[The information follows:]

The table below lists the 23 States that the Safety Board finds are providing the best protection for young drivers through laws designed to curtail alcohol use by drivers under the age of 21. The States not listed on this table are those the Board believes need more work.

State	Good Age 21 Law	0.00 (or near) BAC	Provisional or Nighttime Restriction
Arizona	X	X	
No. Carolina		X	
Oregon		X	
Utah		X	
Wisconsin	X	X	
New Jersey	X	X	
Maine		X	
Maryland		X	X
Ohio	X	X	
Vermont		X	
Rhode Island	X	X	
New Hampshire		X	
California	X	X	X
New Mexico		X	
Georgia		X	
Idaho	X		X
Illinois			X
Louisiana			X
Massachusetts			X
New York			X
Pennsylvania			X
So. Dakota			X
Indiana	X		

55 MILE AN HOUR SPEED LIMIT

Mr. WOLF. On 55-miles-an-hour versus 65-miles-an-hour, I supported the continuation of the 55-mile-an-hour speed limit. How is that working out now that we are up to 65? Has that increased accidents? What has been the trade-off there?

Mr. VOGT. I am going to defer on this in a moment, but our record so far on rural highways is that the increase to 65 has correlated to an increase in accidents and fatalities. I don't know how we are on the interstate highways.

Mr. REAGLE. We haven't actually done a study on that. I think the former chairman, Mr. Lehman, asked us questions on that for several years consecutively.

I think what NHTSA saw in its studies was about a 500 fatality increase on the interstates that the chairman just mentioned.

Mr. WOLF. Could you take a look at that? The reason I ask—and I may have been on the wrong side of the vote, although I felt 55 was appropriate—although, if you drive on the highways, no one is going 65, let alone 55—there are some States that are now moving to change this in non-interstate roads and roads that don't comply with the interstate construction patterns in certain rural areas.

I think you ought to look at what the impact has been in those areas? If you could do that, I would appreciate that. I think it is important. I don't know if the vote is there to go back down to 55 mph, but I think the people ought to know.

Mr. SWEEDLER. I looked at all the studies that were done. NHTSA did some, FHWA, and the Insurance Institute did a summary of that about a year ago. As the chairman mentioned, there is an increase in fatalities in those rural areas where the speed limit has been raised, and it is about 20 percent.

But you have to keep in mind that a very small amount of travel takes place on those rural interstates, therefore, the impact it has on the national statistics is very low. But on those particular small numbers of roads, the impact is about a 20 percent increase.

Mr. WOLF. What States have done that?

Mr. SWEEDLER. Most of the States have done that.

Mr. WOLF. In the rural areas?

Mr. SWEEDLER. Almost all. There are only a few that have not. Some of the New England States and Maryland have not.

Mr. WOLF. I think Maryland is getting ready to look at it.

Mr. SWEEDLER. They have been looking at it and I think the last time the Governor vetoed the bill that was passed by the Legislature. But there are still just a handful of States that do not allow the higher speed limits, and most of those are in New England.

FOREIGN AIR CARRIERS

Mr. WOLF. When the airlines testified here at a hearing last week, one of the members from American Airlines, I believe, and Northwest, agreed that there were regulations that they had to comply with that do not apply to the foreign carriers. I raised this issue when you came by the other day.

Could you look into that and see what regulations are put on American carriers that go head-to-head with foreign carriers, particularly those that deal with safety? They were talking about

some kind of a rule saying that flight attendants on domestic flights couldn't pick up cups when they were taxiing. Another one mentioned was the deicing procedures. Once they leave the gate, the inference was that foreign carriers then follow their own deicing rules and not those of the United States.

Mr. VOGT. We're aware of both of those things, Mr. Wolf. But we are not aware of any foreign carrier, for example, which deviated from the new deicing rules put into effect this winter.

We have heard that foreign carriers allow flight attendants to pick up cups while the aircraft is taxiing. I have anecdotally heard that at least in some instances, our rules on exit aisles and the distance between seats on exit aisles, are not required on all foreign carriers. And there may be some others.

I don't know that we have done an evaluation of that and I don't know what the competitive impact might be.

Mr. WOLF. I think the U.S. airlines are hurting so badly, that anything you do to make sure that the foreign carriers are living under the same rules so that you have a level playing field would be much appreciated.

I would appreciate it if you could look and see if there are any regulations out there floating around with regard to safety, to see if there is an exemption for the foreign carriers. Then we could ask the FAA to put a dollar figure on that to see if that does have an impact with regard to competitiveness.

Mr. VOGT. We certainly would be pleased to take a look at that. I would say, though, that the FAA is the agency which has the most direct dealings with the foreign carriers. If we were to look at that situation, we would probably go to the FAA to get the information because they are the ones that deal directly with the foreign carriers. We deal with the safety issues of carriers under our jurisdiction.

We have had some disagreement with the FAA in the past about foreign carriers, particularly freight operations in and out of Miami and on the level of safety in all operation respects. I think the FAA has just recently stopped most of the carriers from at least one Caribbean country from flying into Miami.

We have generally been on the side of trying to push the FAA toward greater regulation in regard to the foreign carriers.

Mr. WOLF. If you would do it, I plan on asking the FAA the same question. I have respect for what you do. You have been kind of the honest broker on these issues. If you could just look at any regulations, not with the idea of taking them off, but any regulations that may apply to domestic airlines that don't apply to foreign carriers. [The information follows:]

There are FAA rules applying to Part 121 carriers that do not apply to Part 129. Examples of those are: Type III Exit Rule; Policy on Main Door/Inoperative Slide; Digital Flight Data Recorder and Associated Parameters; and TCAS, Windshear and GPWS Installation.

However, many foreign carriers do in fact comply with these rules because the rules of their country of registration are equally stringent to the FARs. For example, European carriers have had digital flight data recorders that recorded more parameters than U.S. carriers have been required to record.

FOREIGN AIRLINE COMPETITION

Mr. CARR. Would the gentleman yield?

Mr. WOLF. I yield to the chairman.

Mr. CARR. On that point, we would like to hear your recommendations about changes in your authority that might be necessary as we move to globalization of the airline industry. We now have two combinations, and as of this morning, apparently three combinations where domestic carriers share routes with foreign carriers. And we're moving toward this so-called seamless globalization of the airline industry. An American citizen relying on his or her Government to assure safety through you and the FAA purchases a ticket on USAir, Northwest, or Continental to a foreign destination and in effect all or parts of those segments may be on aircraft that are under the sovereign control of another country with regulations that are perhaps seriously divergent from those we grant to our own carriers.

Mr. Wolf, I don't think it is just a matter of the foreign competitor. The competitor is now us. Perhaps we need to update the laws to say that if airlines are code sharing, they will be part of our jurisdiction because we have given a guarantee to the American people that certain standards will be met.

Maybe you could advise us on that.

I thank the gentleman for yielding.

Mr. WOLF. I thank the gentleman.

The chairman is accurate because now with the British Airways/USAir merger—which I did support because I feel it is an opportunity for our Government to seek reciprocity—but how, for example, would this cup rule apply on a USAir/British Airways flight?

HEAVY TRUCK ROLLOVERS

Let me get to another subject on truck safety. The committee put language in 3 years ago for the FHwA and the State to test a rollover prevention system. I want to ask you if you have looked at it.

Two activated signs will be on beltway ramps in Maryland and two in Virginia. You may recall from several years ago the major accident where a truck tanker rolled over and burned, and the infrastructure was shut down. FHwA is developing, at the request of the committee, activated signs so that when the truck hits the ramp, if the truck is going too fast, it will be advised of the appropriate ramp speed.

Have you taken a look at this concept?

Mr. VOGT. No, we have not.

Mr. WOLF. Could you look at it? We will get you the materials. Please, look at that and give us your best judgment on it.

Mr. VOGT. Mr. Sweedler?

Mr. SWEEDLER. We would certainly be interested in looking at that. A few years ago we did investigate a rather serious accident in California where we had a rollover on a ramp because of the speed problems. We are certainly very interested in this whole issue.

Mr. WOLF. We think we have come up with a good idea. It took the Federal Highway Administration a long time to move. It took the State of Virginia a good while to move. I worked with Congressman Hoyer on it. They are going to put these in both in Mary-

land and in Virginia at the same time. We will get you the material if you could look at it.

Mr. VOGT. Certainly.

TRUCK SAFETY

Mr. WOLF. On the question of truck safety, how many trucks out there do you think are in violation of the truck safety rules? If you stopped 100 trucks, how many would be in violation?

Mr. VOGT. Well, we know about it on buses in two States and it was very high. What do we know about trucks, George?

Mr. REAGLE. We did a study on truck brakes and the Board looked at it right before our new chairman came. We looked at five States, and I believe we did 1,800 brake inspections. On the average, we found that over 50 percent of the brakes were so out of adjustment that the trucks would be put out of service.

Mr. WOLF. So if you are out driving on the beltway today, there it is a good chance that every other truck you see is in violation?

Mr. REAGLE. I think we ought to characterize the problem a little differently.

With respect to stopping, if the trucks had to make a normal stop, the vehicle could stop. It is not that the brakes don't work at all, but a question of their effectiveness in a panic situation where the brake systems must perform up to 100 percent.

Mr. WOLF. Shouldn't we be putting a little more enforcement into this area?

Mr. VOGT. There is a lot going on right now in terms of research on new brake technology between the trucking industry and manufacturers.

Mr. WOLF. But by not having aggressive enforcement, don't we discriminate against the honest trucker who is taking care of the brakes?

Mr. VOGT. I think we are in favor of the highest level of enforcement because it has to be an enforcement-driven mechanism. It is also a liability-driven imperative right now.

Mr. WOLF. How many accidents are caused by trucks where there is a fatality involved?

Mr. VOGT. I don't know what our record is right now, but it is quite high.

Mr. LOEB. About 5,000, involving medium and heavy trucks.

Mr. WOLF. Has that figure been relatively stable over the years?

Mr. VOGT. Yes.

Mr. WOLF. Not getting a lot better and not getting a lot worse?

Mr. VOGT. Interestingly, about 5,000 or 6,000 fatalities involved in truck accidents and about 1,000 truck drivers killed a year. So the fatal impact of truck collisions is on the other vehicles.

Mr. WOLF. So truck driver deaths and the deaths of people involved has been relatively stable?

Mr. VOGT. Yes.

Mr. WOLF. So it seems to me that there is something that could be done to get at it and enforcement appears to be the way to go.

Mr. REAGLE. I think there were three things that we saw in our study, Mr. Wolf. One was maintenance practices. There has to be

uniform practices and consistency with respect to maintaining the systems which are very sensitive.

The second thing we have recommended concerns trucks manufactured after a certain date should have anti-lock brake systems.

The third thing we feel strongly about is new technologies, technologies that would be less sensitive to maintenance than what is out there now.

Mr. SWEEDLER. We also have to recognize that braking is only one aspect of the trucking problem and probably not as big as some of the human performance aspects of trucking, such as fatigue, which is one of our major emphasis areas.

TRUCK DRIVER FATIGUE

Mr. WOLF. What about the fatigue question? Have you looked at fatigue carefully with regard to truck safety?

Mr. VOGT. We are in the middle of a fatigue study right now.

Mr. WOLF. What are you finding generally?

Mr. LOEB. It is too early to tell what we are finding Mr. Wolf. We're probably about a year away from that. Right now we have investigated in the neighborhood of 50 truck accidents that involve the possibility of fatigue. With a substantial number of those, we are fairly certain that fatigue was involved. But due to the nature of the study and the methodology that is being used, we really can't see anything or conclude anything at this point.

Hopefully, the outcome will be identification of issues, and perhaps even remediation in terms of irregularity of schedule, perhaps the hours of service in terms of the overall time, although we don't suspect that that is as significant an issue as the irregularity of the schedules.

Mr. SWEEDLER. The study we did in 1989—looked at truck drivers fatalities in eight States. We found that about in one-third of the accidents the drivers who had died had fatigue problems. So we are following that up with this major study.

Mr. LOEB. It was in fact a larger single entity, larger than the alcohol and drug group, although there is overlap between the two of them.

RADAR DETECTORS

Mr. WOLF. How many trucks out there today do you think have radar detectors? If we stopped 100 trucks up at Breezewood today, what would you get?

Mr. VOGT. I don't think we know.

Mr. WOLF. But that is pretty important, isn't it? Doesn't that get to the question of—how many States ban these radar detectors? The State of Virginia bans them and which other?

Mr. VOGT. Connecticut and I think New York. Does the State of Virginia have statistics on it?

Mr. WOLF. It is a heavy fine. Some of the truckers say that they like it and others obviously don't. There is heavy enforcement on the Cabin John bridge and places like that as you are coming in.

Years ago, this rollover issue came about as a result of the concern on the beltway. About a year and a half ago we were having an accident about every other week. When we get an accident on the beltway or on Shirley Highway, it pretty much ties up the region for the day. There was the one at Old Georgetown Pike, and then the one at 236.

So we got the Federal Highway Administration and the State Police to put radar devices on the beltway that would trigger the radar detector. I think it had a good result—but then after awhile they found out that it was at a certain location and after awhile the newsletter told you where they were located, so we started to move them. Nothing has been done since.

Maybe the Congress ought to look at having a national law on abolishing radar detectors and maybe we shouldn't. I just wonder how prevalent it is and what kind of a problem you think it is.

Mr. VOGT. That might be a question to put on our list.

Mr. WOLF. Is that in the accident report the State Police have?

Mr. LOEB. Generally not.

Mr. WOLF. I would think that would be a good question to ask the State Police in the random States where we are doing this is in the accident report of the truck accident as to whether their radar detector was in the truck at the time.

Mr. REAGLE. Let me make two comments, Mr. Wolf.

The Insurance Institute for Highway Safety I believe has a study underway on radar detectors. So when they finish that, I will be more than pleased to get you a copy.

Mr. WOLF. I would appreciate that.

Mr. REAGLE. I think there was a group of highway safety representatives who asked the Federal Highway Administration to begin rulemaking on the banning of radar detectors. I am not sure what happened to that.

Mr. WOLF. I would appreciate it if you would let us know.

[The information follows:]

In 1990, the Insurance Institute for Highway Safety and seven other organizations filed a petition with the Federal Highway Administration to ban radar detectors. In January 1993, the Department of Transportation issued a proposal to outlaw radar detectors in heavy trucks and buses, and any placarded vehicle transporting hazardous materials. Buses designed to transport 16 or more occupants are included. The Department has set a May 15, 1993, deadline for comments on its proposal.

DENVER AIRPORT

Mr. WOLF. I would also like to ask you to look at the safety questions relating to the cargo terminal at the new Denver airport. We have had some people contact us about a potential safety problem. My staff will send you the memo. I can't vouch for the memo. I had been concerned about the Denver airport and whether Stapleton was going to stay open or whether it was closed. We could give you that and you could look at it in an informal way or a formal way to see if there is a safety problem with the location of the cargo terminal.

Mr. VOGT. With the construction of the cargo terminal?

Mr. WOLF. Yes. Let us get you the memo so you can look at it.

I am not asking you to do a full-blown investigation, but maybe one of your experts could look at it.

The other question—you're going to be looking at the safety questions related to the intelligent highway systems. You are foreseeing that there will be some potential problems there.

Mr. VOGT. There is certainly a lot developing there. I am sure we will be involved in it.

KOREAN AIRLINES FLIGHT 007

Mr. WOLF. Have you ever been asked to look at the Flight 007 recorder? Did anyone ever ask you to take a look at it? The recorder was supposedly given back to Korea. We found out that the box Yeltsin gave them was basically empty.

Mr. VOGT. We had an involvement. Mr. Forté is the head of our Office of Aviation Safety.

Tim?

Mr. FORTE. ICAO reopened its investigation and formed an international team, of which we are a party. Even as we speak, there is a group in Seattle meeting today on the issue.

Mr. WOLF. Could you keep me informed? I had some people come by to see me about it, and I passed this on to the White House and to others. They maintained that the Soviets have the flight recorder, and I think that is true. They also maintain that there were some survivors. They gave me names, places, and dates, and we have passed it on to the Government.

But I think seeing and listening to that flight recorder would make a big difference. I would urge our Government to pressure the Russian government to allow us to listen to the flight recorder.

Mr. FORTE. The Russian government has turned over the recorders to the international group.

Mr. WOLF. When?

Mr. FORTE. About 2 months ago.

Mr. LOEB. They met in Paris and they have in fact done two things. They have gone to the flight data recorder, the data portion. They have also listened to and transcribed the cockpit voice recorder. Both have been done under the auspices of ICAO.

NTSB flight data recorder and cockpit voice recorder specialists were involved. The transcripts have now been prepared and ICAO has them.

Mr. WOLF. Do you have a copy?

Mr. LOEB. No, we do not have a copy of it. The United States just participated along with other countries of interest in the ICAO investigation.

Mr. WOLF. There are some family members who have contacted me. Would somebody from your agency be willing to talk to them? Or how will that be done with regard to the families? These are American families.

Mr. FORTE. Once the report is complete by ICAO, it would be a public document.

Mr. LOEB. First of all, it is not a United States investigation. We do not have copies of this information. We are just participating with ICAO, so there are a couple of possibilities. The State Department, by the way, was completely involved. You may want to have them speak with the State Department.

Mr. WOLF. Can you give us the name of who?

Mr. LOEB. Yes, we can.

Mr. WOLF. From your experts that listened to it, do you think there could have been anyone alive?

Mr. LOEB. I have no idea, to be honest. Nor do I know whether it would even be possible to tell from the recorder.

Mr. WOLF. Generally, is it possible to tell?

Mr. LOEB. Sometimes it is and sometimes it isn't. It depends on the precise occurrence. For example, if you lose all power at the time of a catastrophe at a high altitude, then you're not going to be recording on the way down. If you don't lose power and you are recording for a period of time, you may be able to hear sounds coming from the cabin. Normally, you are hearing a lot of things in the cockpit, but not necessarily in the cabin.

Mr. WOLF. Why don't you just contact my office and give me the names of the people from the State Department?

Was there somebody from your agency that was part of it? Is there somebody who understands what these devices are?

Mr. VOGT. Yes.

Mr. WOLF. Please, give us that person's name as well.

Mr. VOGT. Some commentaries on the transcript have been published in trade publications. So it is going to be public. At least the one I read would suggest that it is hard to believe that anybody could have survived because the aircraft came down from a high altitude.

Mr. WOLF. I understand that, and that was my attitude. But the person who came by and saw me was in touch with somebody who had spent a long time in a Soviet gulag and they gave me data which I passed on to the White House which was really amazing. Again, it could have just been a fraud. We don't know

But when Yeltsin gave the box to the Koreans initially, wasn't it empty?

Mr. VOGT. I don't know the answer to that question. There was a question as to whether what was in the box had anything on it.

Mr. FORTE. Our indication was that during that ceremony the box was empty and it was about 3 or 4 weeks later when they actually discovered the actual boxes.

Mr. WOLF. Thank you.

I will submit the remainder of my questions for the record.

HEAVY TRUCK ROLLOVERS

I noted that heavy commercial truck safety is on your "Most Wanted" list. You may be aware that this committee has addressed the issue of truck rollovers on interstate ramps.

We have appropriated funding to initiate testing later this year of activated message signs which will warn trucks of the danger of rollover on four beltway ramps. These are not signs which will flash constantly, but rather computerized signs that will warn only those truck drivers who are taking that particular ramp too fast under present conditions.

In the Safety Board's investigations of truck accidents, particularly rollovers, have you made any recommendations concerning the use of this type of technology?

[The information follows:]

The Safety Board has made many recommendations in the past to address the truck rollover issue. Some of these recommendations have dealt with signing as a means of warning trucks of ramps which are high incident locations. As a general rule, a Safety Board recommendation would not specify the exact type of signing a jurisdiction would be expected to use. This would be a decision each jurisdiction would have to make based upon the resources available to design and install or operate such a system. However, the Safety Board supports the concept of utilizing state-of-the-art approaches to solve current problems.

In order for a truck activated flashing message sign to be effective the system would need to properly identify the target vehicles soon enough for the driver to take corrective action before entering the ramp. The sign system would then need to display a message appropriate for the specific vehicles and drivers identified. The Safety Board has not reviewed or evaluated any specific design approaches at this time.

SEAT BELTS IN SCHOOL BUSES

Mr. WOLF. I also noted that school bus safety is on your "Most Wanted" list. Have there been any studies that you are aware of—or has the Safety Board made any recommendations—concerning mandating seat belts in school buses?

[The information follows:]

On March 18, 1987, the Safety Board issued a safety study on the crashworthiness of large poststandard schoolbuses. Based on the findings of this study, the Safety Board does not recommend that states or school districts allocate funds to retrofit or order large poststandard schoolbuses with lap belts for passengers. The Safety Board also does not recommend that Federal schoolbus safety standards be amended to require that all new large schoolbuses be equipped with lap belts for passengers. It is our belief that the safety benefits of such actions, both in terms of reduced injuries for schoolbus passengers and in seat belt use habit formation, have not been proven.

AIRLINE NAVIGATION INTERFERENCE

Mr. WOLF. There was a recent article in *The Washington Post* regarding suspected airline navigation interference from the use of electronic devices such as video games, cellular phones, and lap top computers.

Has this issue ever arisen in an airline accident investigation conducted by the NTSB, and if so, how have you addressed it?

[The information follows:]

Although the Safety Board has never found interference from portable electronic devices to have been a factor in any aircraft accident, the Safety Board is currently investigating the possible adverse effects of portable electronic devices on transport aircraft. We are aware of recent media reports of navigation interference from portable electronic games, cellular phones, laptop computers, and personal audio/video equipment. NASA's voluntary Aviation Safety Reporting System (ASRS) also contains reports from flightcrews of possible interference with aircraft navigation equipment. We have found the reported incidents difficult to verify, even when the reports were initiated by airline flight crews, because the suspected portable electronic devices were not normally identified by make, model, or location in the airplane, and they were not normally impounded or tested to verify their effects on the aircraft.

The only accident that the Safety Board has investigated that was attributed to electronic interference occurred in 1989. The accident involved an Airmanship Model 600 (the Fuji Blimp) that was affected by electromagnetic fields. The aircraft was not affected by portable electronic devices. The blimp experienced a failure of both engines as it passed near the Voice of America antenna farm near Greenville, S.C. The blimp settled to the ground and slightly injured the crew of two. Our investigation revealed that the ignition modules for the engines were originally designed for an automotive application. They did not meet, nor were they required to meet, the level of protection that FARs provide for the air transport fleet.

The FAA recently completed a draft advisory circular concerning portable electronic devices on aircraft. The advisory circular provides general guidance but allows each operator to establish their own criteria for the use or prohibition of

such devices. The FAA has also asked the RTCA (Radio Technical Commission for Aeronautics) to investigate the matter. An interim RTCA report is expected in October and the final report in July 1994.

The Safety Board believes that the FAA, the airline operators, and the aircraft manufacturers are aware of and appropriately researching this issue. The Safety Board will remain actively involved and will continue to monitor the progress of potential rule making activities.

UNITED AIRLINES COLORADO SPRINGS ACCIDENT

Mr. WOLF. In your testimony you discussed the sudden, yet unexplained, accident involving United flight 585 near Colorado Springs 2 years ago. As a result of this accident, you indicated that the FAA will develop a meteorological aircraft hazard program for airports in or near mountainous terrain.

Will this include the much-discussed new Denver airport which is located closer to the mountains than Stapleton?

[The information follows:]

The Federal Aviation Administration (FAA) has indicated it agrees with the intent of two Safety Board recommendations issued following the Board's investigation of the Colorado Springs accident, which called for a two phase program to observe, document, and analyze potential meteorological aircraft hazards. The program would begin in the Colorado Springs area and subsequently expand to other mountainous areas, including the nearby Denver terminal area. Because of budget constraints this program has not yet been started; however, the Board hopes it will get underway next year.

HIGH SPEED RAIL SAFETY

Mr. WOLF. This Committee just completed a hearing on high speed rail. Given your various investigations of rail accidents, I wonder if you could comment on any safety issues that NTSB might have on its radar screen with regard to passenger rail at speeds above 150 mph, and above 200 mph.

[The information follows:]

At speeds above 150 to 200 miles per hour, all accidents are serious accidents and no high speed rail authority can afford to have even one. Accidents due to the human failures of operating crews will be controlled by use of automatic train control so that mistakes will not lead to disaster. The Safety Board, however, will have to concentrate on two other areas where human performance still plays a major role; grade crossing safety and vehicle maintenance.

Grade crossing safety must be guaranteed on high speed corridors. The only way to guarantee safety is to insist on 100% grade separation on all high speed rail corridors. Absolutely no grade crossings can be tolerated on these lines. In addition, highway bridges and overpasses must be instrumented to detect intrusion from vehicles or objects falling off of bridges and on to the track.

Trains operating at high speeds cannot tolerate mechanical failures of the vehicle, the track bed, or the signal system. Greater emphasis must be placed on the maintenance of equipment and systems to ensure that the high speed rail system remain safe throughout its operating life.

AUTOMOBILE SEAT BELTS

Mr. WOLF. Thank you, Mr. Chairman.

Mr. CARR. Mr. Price.

Mr. PRICE. Thank you, Mr. Chairman.

I would like to push a bit further on a couple of areas that were raised earlier, one being young drivers and another being seat belt regulations, and then to raise further questions about gas pipeline safety.

First, referring back to our brief discussion of current seat belt technology and the safety of various types of devices, as I recall it, a few years back the device of choice in most new cars seemed to be a manually fastened shoulder harness which at the same time fasten the lap belt. Now, I believe, most cars are equipped with an automatic shoulder harness which leaves the lap belt to be fastened manually.

As I understand your point, that may not be an advance at all. In fact, it is very dangerous to have that shoulder harness fastened and not to have the lap belt in place.

That leaves me with a couple of questions.

First of all, what is the status of regulations in this area and to what extent does this current practice reflect that?

Then, what would you do to encourage a more adequate technology and safer practices?

Mr. VOGT. The mandatory use of seat belts is within the jurisdiction of the States. The requirement for seat belts is a Federal mandate.

Mr. PRICE. I understand the need to encourage and require use. I am talking about the kind of technology with which new cars are equipped.

Mr. VOGT. I am not sure whether or not it has been determined that the system is unsafe. We have seen evidence of it not working and in fact being dangerous because people tend to forget to attach the lap belt portion. If everything is attached, it is going to meet Federal requirements.

Mr. PRICE. Of course. But the point is that people often don't attach that lap belt.

Mr. VOGT. I don't know whether that has come up to the level of concern beyond us.

George?

Mr. REAGLE. Let me respond first by saying what is required.

NHTSA sets performance standards. The specific standard is 208. It requires that the vehicle meet certain barrier tests at 30 mph. The technology that is incorporated in that vehicle is up to the manufacturer so long as he can meet the requirements. Some met them with air bags, some with passive restraints.

So basically they have to meet those performance standards in those vehicles. Again, some manufacturers did it with passive restraints where there is a belt that goes across the upper torso and the manual lap belt. Some did it with three-point manual belts. Some did it with air bags and manual lap belts.

As I mentioned before in response to Mr. Coleman, we are doing a study now where we have looked at some 50 accidents involving passive restraints.

Mr. LOEB. However, I think it is important to add that that situation is changing now. Through the 1990s, air bags will become the required means of meeting the passive restraint requirement, so the automatic or passive belt system is phasing out.

Mr. REAGLE. The ISTEA legislation required air bag technology.

So all cars in the middle 1990s will have an air bag plus a manually operated belt as used the 1970s before we had the passive belts. But the question you are raising is what do we do now?

Mr. PRICE. That is the question I am raising. I am still curious to the extent to which these tests factor in some probability of the driver actually using the full system.

Mr. REAGLE. The compliance testing that the manufacturer would use in the Government would be the full system being in operation.

Mr. LOEB. The answer to your question is that they don't. They don't factor in driver non-compliance.

[Additional information follows:]

Automatic belt systems, many of which are manually detachable, *are* fully utilized in the automatic mode during the compliance test for Federal Motor Vehicle Safety Standard (FMVSS) 208. Air bag vehicles have manual lap and shoulder belts which are not attached during the crash test. Vehicles with automatic upper torso belts have manual lap belt systems that also are *not* attached during the federally mandated crash test. The safety standard, as currently written, required the occupant take no action (such as fastening manual belts) to receive crash protection. However, prior to the advent of the automatic crash protection requirement of the Federal safety standard, the test procedure called for the manual belts to be fastened during the crash test.

AUTOMATIC SEAT BELTS

Mr. PRICE. And are there any studies that have explored the extent to which drivers actually take the time and trouble to fasten that critical lower belt?

Mr. REAGLE. That is what we're looking at in our study—to what degree they used what parts of the system and what were some of the anomalies with some of the systems installed.

Mr. LOEB. There are also surveys that are done periodically that attempt to get at whether the lap portion is belted as well as the upper torso belt. The upper torso restraint is done in the automated system, so it is only the lap portion you are looking at.

There is considerable non-use of the lap portion but I don't think we know exactly what that level is.

Mr. PRICE. And there is no question that that is dangerous, right?

Mr. LOEB. Absolutely.

Mr. REAGLE. Absolutely.

UNDERAGE DRIVERS

Mr. PRICE. I want to commend you for your work on young drivers. I think the kind of attention you focused on that problem and the kind of recommendations you have made are very important. Of course, most of your recommendations do focus on State and local action.

I wonder how satisfied you are with the leverage you have or don't have in that area. Again, picking up on our earlier discussion, are there specific areas for Federal action that strike you as promising?

Then beyond that, how do we get the States to do what they need to do in this area? Any need to rethink our policy approach by which we attempt to induce the States to move?

Mr. VOGT. I am going to ask Mr. Sweedler to comment on that because he has been so involved with it. But let me tell you what my impression has been.

The Safety Board and others have been, in my judgment, surprisingly successful with State Legislators. It has required a lot of hard work. But when a suggestion like this most recent one is made, and it makes sense like this does, our experience has been that enthusiasm is generated. It comes not only from the public at large but from the interest groups—the insurance companies, the automobile people—everybody is interested in reducing the numbers of accidents.

In a case like this, I believe our response so far has been very encouraging except from the teenagers who feel that they are being deprived of one of their privileges.

From our work in general with State Legislatures on the age 21 law and other matters, while time-consuming, we find that some States are more receptive than others. But I have been very impressed with our ability to communicate and deal with these issues on a State level.

Barry has been directly involved and has testified many times in State Legislatures on a variety of matters. He might want to add his perspective to that.

Mr. SWEEDLER. It is just as you mentioned. We raise the issue and generate a lot of interest. Many groups work with us. We are very willing, and sometimes at a day's notice, we appear at a State capital because a legislative hearing is being held. We have been to most State capitals at one time or another on various highway safety issues and issues in other modes. We also form coalitions with national groups to push the issues.

One of the main ones that is on our "Most Wanted" list is administrative license revocation. We have had very good success. This past year five States adopted that legislation. We are up to 33 States now. We hope that within the next year or two we will have all the States.

The Congress has also responded by offering incentives to States that pass this important legislation.

So the interest sometimes reaches a point where Congress tries to help the States or penalize the States if they don't take certain actions.

UNDERAGE DRIVERS

Mr. PRICE. Mr. Chairman, I know some information was requested earlier for the record. I think it would be very useful to have as full an accounting as you can give of these various youth-related safety recommendations and what the States have done to put those in place.

At the Federal level, do you think NHTSA needs to devote more of its resources to youth-related activities?

Mr. SWEEDLER. I think they're doing a nice job with the youth aspect. We have cited many of their programs in our letter of recommendation to the Governors. They have done a lot of the groundwork for what we're actually calling for. They support fully the programs that we are asking for with the States.

Mr. REAGLE. I feel comfortable that NHTSA is working in that area. They obviously see it as a big problem. I think through their

grant and aid program with the States they put that as a major priority.

Mr. CARR. Would the gentleman yield?

Mr. PRICE. Certainly.

Mr. CARR. Perhaps in addition to supplying the data that we asked for, you could supply it in a form that each one of the Members of this subcommittee could keep in our desk drawer up here. We have a lot of people from the States coming before this subcommittee asking us for our help in directing funds toward them. Perhaps if the members of this subcommittee had that list at our fingertips, we could ask them some questions about their compliance. Perhaps they would begin to make a connection between asking us for funds and their compliance with certain recommendations of the NTSB.

Would that meet with the approval of the members here to make that a routine part of our questioning?

Mr. VOGT. We will certainly do that. This particular supply of information is just getting started because this is a new initiative on our part.

Mr. CARR. I think this Committee wants to help you on that.

I thank the gentleman for yielding.

NHTSA EFFORTS AND UNDERAGE DRIVERS

Mr. PRICE. Back for a moment to NHTSA's budget, I have some figures here that I assume are accurate, that out of a total of over \$24 million spent on the traffic safety program's contract portion of NHTSA's budget, \$1.26 million is targeted to youth safety challenges.

Is that a fair reflection of the priorities and the efforts there?

Mr. VOGT. I think we would need to take a closer look at that to see it in relative terms.

George, have you seen that budget?

Mr. REAGLE. Yes. That would be just a small portion of their total. They have \$125 million that goes to the States for the grant and aid program. I think their total is probably close to \$200 million.

We want to look at total programs funded at the \$200 million level.

Mr. PRICE. But that, too, is for a much wider range of activities, right?

Mr. REAGLE. Yes.

Mr. PRICE. If you have anything to add for the record in terms of the NHTSA budget and the extent to which it is devoted to these youth-related problems, that would be helpful to have as well.

[The information follows:]

The National Highway Traffic Safety Administration's (NHTSA) youth program includes activities pertaining to the prevention of accidents, public education of youth and parents, efforts to increase enforcement of relevant laws, and judicial efforts to enhance youth traffic safety. According to the NHTSA, total contract expenditures for these youth targeted activities are estimated to be:

Fiscal Year	Amount
1991	\$ 850,000
1992	1,100,000
1993	1,200,000

In addition to these funds earmarked specifically for youth related alcohol use problems, the NHTSA spent the following estimated amounts to increase seatbelt use among the 16 to 20 year old group of drivers:

Fiscal Year	Amount
1991	\$ 10,000
1992	50,000
1993 (planned)	60,000

CHICAGO PIPELINE ACCIDENT

Mr. PRICE. Let me turn to gas pipeline safety. I know our time is limited.

I am interested in your report on the pipeline accident in Chicago that just killed four people. In particular, you complained about RSPA's failure to implement a safety recommendation that you issued as early, I believe, as 1987. Is that right?

Mr. VOGT. Yes.

Mr. PRICE. You have some pretty strong language in your report on that accident. You say that "contributing to the cause of the accident was RSPA's failure to promulgate requirements for gas system employee training and qualification standards," from page 12 of your report.

The accident happened on January 17, 1992. Only a few days later, the Bush Administration issued their call that Federal agencies, including RSPA, desist from issuing proposed or final rules unless those rules were subject to statutory or judicial deadlines or responded to emergencies that posed an imminent danger to human safety or fostered economic growth.

Apparently then later—and you can help me sort this out—RSPA retrospectively justified their failure to issue these regulations by citing that Administration directive, although admittedly that directive wasn't in place during those many years prior to January 17, 1992. In fact, the directive was issued after the accident.

In any case, the question still remains of how restrictive that directive was and what responsibility it bore for RSPA's continued failure to issue regulations in this area.

What is your account? Why do you believe that RSPA did not promulgate regulations? Was there confusion on the part of the agency about what did or did not qualify? Or do you think they simply used the Bush directive to rationalize their prior foot-dragging and in fact their continued foot-dragging?

Mr. VOGT. On that particular accident, there was an experienced employee who was involved who, as I recall, turned the control valves in an inappropriate manner in spite of a series of obvious warning indications. It was a bit of an anomaly because we did not have a raw recruit but we had an experienced person who was doing this.

We came down hard on RSPA on the emphasis of training because the implications of this accident go way beyond this particular incident. All you have to do is set a valve the wrong way and you can have a result like this.

We have had difficulty in a number of areas with RSPA promulgating regulations during the so-called moratorium. In several other areas as well, they did not promulgate regulations in which we were interested due to that.

We understand that that went away when Mr. Clinton was inaugurated and that Executive Order was rescinded. So we don't know what their current position is going to be.

I am going to ask Mr. Reagle to respond on the question of why RSPA did not over the years respond to that, and Mr. Sweedler as well.

Mr. REAGLE. The only comment I would make, Mr. Price, is that this has been a longstanding issue with the Board, so obviously the Bush Administration's imposition of a moratorium couldn't have affected this issue all those years. Mr. Sweedler probably knows the historical perspective.

Mr. SWEEDLER. I think one of the big problems RSPA has claimed is workload. This is not an issue that they have not agreed needs to be addressed. In fact, I believe they had a regulatory project underway to actually do what we asked them to do, and they are still moving in that direction.

I think our concern is the long delay and the time it takes. That is why I think the Board voted to say that this was unacceptable action on their part. It is a very important issue.

PRESIDENTIAL REGULATORY MORATORIUM

Mr. PRICE. So your assessment would be that the Bush directive was essentially used as a rationalization?

Mr. SWEEDLER. Toward the end of the process, yes.

Mr. VOGT. But it was a relatively short period of time in the entire history of this particular regulation. We have had several issues involving RSPA over the years where we do not believe they have been responsive. Excess flow valves is another example, which has to do with pipelines.

RSPA RECOMMENDATION RESPONSE

Mr. PRICE. What is the current status of this recommendation that has been sitting there for all these years?

Mr. SWEEDLER. At the current time, they are moving forward with a regulatory project. I think you will have to ask them when they will finish it. We keep bringing it up at meetings and stressing the importance of it.

Mr. VOGT. Is this included in their proposed rulemaking? Was it not included in the Pipeline Safety Act of 1992?

Mr. SWEEDLER. I think RSPA claims they have so much on their plate that they can't get to it. But we think they should raise this to a higher level of importance. We will keep after them on that.

EXCESS FLOW VALVES

Mr. PRICE. As you know, the rationalization is now removed with the advent of the new Administration.

What about other safety recommendations might have been held up, whether genuinely so or just by way of rationalization by the conditions the Bush Administration laid down in early 1992?

Are there other items on your "Most Wanted" list or near the "Most Wanted" list that have been held up because of this directive and that you would hope would be reconsidered now?

Mr. VOGT. The excess flow valves were one and now there is rulemaking underway, but we think that that was primarily included in the Natural Gas Safety Act of 1992, which mandated that they come out with a rulemaking. That has been on our list for years.

Why there has been foot-dragging on that I can't say. But the period of the moratorium is but a short span of time in the total

context of an issue that this Board has been pursuing for many years.

It looks now as if perhaps something is going to happen, but I don't sense a great deal of confidence in our staff on that.

Mr. SWEEDLER. We've been asking for excess flow valves since 1971 and it wasn't until we placed it on our "Most Wanted" list a few years ago that the Department decided that maybe they should do something. They started moving with a rulemaking and then the Congress agreed with us and basically put the requirement on them. But we are reaching a point where the requirement placed by the Congress is fast approaching, and we still don't have a rule. In fact, we don't even have a proposed rule. All we have is an advanced rule.

I know a proposed rule has been prepared. It had been prepared more than a year ago, but it still has not come out.

Mr. REAGLE. We commented on the RSPA advanced notice in December of 1990, so it has been going on 3 years.

Mr. VOGT. We would appreciate any pressure you can put on them. As a matter of fact, a large measure of our frustration is alleviated by you ladies and gentlemen when you address these issues with the regulatory agencies and hear their explanations for delays.

Mr. PRICE. Of course, that is one reason we have these hearings.

Mr. VOGT. We appreciate it.

Mr. PRICE. Thank you very much.

Thank you, Mr. Chairman.

AUTOMOBILE RESTRAINT SYSTEMS STUDY

Mr. CARR. Mr. Vogt, during last year's hearing, Ms. Coughlin reported on a study of automobile restraint systems. She stated at that time that the NTSB had not found structural deficiencies in these systems which are now installed in millions of cars, but there were operational deficiencies.

What is the status of this study? Can you elaborate on your findings regarding operational deficiencies?

Mr. VOGT. That is what Mr. Reagle was talking about.

Mr. CARR. Is the study complete?

Mr. REAGLE. Let me tell you where we are, Mr. Chairman.

We have done the 50 plus accident investigations. We have done the analysis and we have the first draft of the report circulating among the staff.

Mr. CARR. I would appreciate it if you could give us a detailed summary of the findings of your work to date. If I could get a copy of the summary in my office in a few days, I would appreciate it.

Mr. VOGT. When do we expect to have that on our docket?

Mr. REAGLE. I would say 2 months before it gets to the Board.

Mr. CARR. My own district includes facilities of the three major U.S. automobile manufacturers. In fact, the proving grounds of Chrysler and General Motors are in my district. The test facilities for vehicle crash testing and the like are not very far away. In fact, at the University of Michigan there is another facility that is right on the edge of my district. I have a great deal of interest in this area.

Have you discussed your study with the auto manufacturers?

Mr. VOGT. As a matter of fact, we are planning to visit that facility in about a month. I don't know to what extent they have been involved in our study at this point.

Mr. REAGLE. Generally, Mr. Chairman, we finish the factual and the analytical portion, and then have a technical review. That is what we would plan to do with the industry sometime early this spring.

Mr. CARR. I would just say that there is a tremendous wealth of information at these vehicle test facilities about all of this. It would be seemingly unwise and potentially unfair for you not to avail yourself of their expertise and to work with auto manufacturers to resolve any conflict.

Mr. REAGLE. We will. Absolutely. I would agree.

ON-BOARD VAPOR RECOVERY SYSTEMS

Mr. CARR. On a related matter, what has the Board done in the last year regarding the ongoing controversy about on-board vapor recovery systems?

Mr. SWEEDLER. As you are well aware, the appeals court threw out EPA's refusal to not issue an on-board rule and ordered EPA to issue it. The Administration decided not to appeal the court ruling and indicated just last week that they will issue an on-board rule.

The Safety Board has been involved in reviewing the work that has been done by NHTSA and the Insurance Institute. Basically, we agreed with the automobile manufacturers. We did not think that the way the current technology was that that rule should be promulgated and made our feelings well known to the DOT and to EPA. In fact, the chairman sent a letter to EPA last week on that subject.

Mr. CARR. Your help on this issue is greatly appreciated. I think that some of our friends who intend to make the air cleaner nonetheless don't understand some of the safety consequences.

Mr. SWEEDLER. There are better ways and much safer ways to do it.

Mr. CARR. Adding all these tubes, pipes, and canisters adds not only weight to a vehicle but seriously complicates the design of an automobile. Potentially, those additions run counter to our goal of making an automobile safer in crash or rollover situations.

Mr. REAGLE. When I was at NHTSA, Mr. Chairman, I dealt with that issue and one of our major concerns was the very issue you brought up, and that is safety issues, especially fires, due to improperly maintained systems. We saw it in several test vehicles where the vehicle didn't run well, and people did things to the systems. In hot weather, for example, fire was a high probability. We were really concerned about that issue.

Mr. CARR. The Administration has decided not to appeal. Are there other parties who could appeal?

Mr. SWEEDLER. I believe that the manufacturers may have an option of appealing to the full Appeals Court, but I am not quite certain as to what the next steps will be. This all just happened within the last few days.

Mr. CARR. Perhaps we might need to move legislatively to remedy this situation. I think NTSB has had a forthright position on this and NHTSA has had as well.

Just to sweep that aside for the benefit of some who have a particular method that they want to achieve—cleaner air—as you point out, it can be done, but there is a better way to do it.

Mr. REAGLE. A smarter way.

PALM SPRINGS SCHOOL BUS ACCIDENT

Mr. CARR. Thank you for your help on that.

You talked with Mr. Coleman about school buses. I am quite interested in the safety of school buses myself. The NTSB investigated an accident in Palm Springs in 1991. It involved 45 girl scouts who were on a chartered school bus and six people were killed. What can you tell us about the cause of that accident?

Mr. VOGT. It is on our Board meeting agenda for April 13.

George, can you tell the chairman where we are on that?

Mr. REAGLE. It is before the Board and until the Board looks at the report and agrees with the staff's findings, at this point I don't think we can—

Mr. VOGT. We can't talk about our conclusions, but just the facts of the things. We have issued the factual report.

Mr. REAGLE. As in most accidents like that, there were mechanical problems we looked at with respect to the vehicle. There were human factors examined. There were signing issues we looked at. There was the issue of a private road and whether a private road ought to be signed the same manner as a public road. All those issues were explored in our investigation.

Mr. CARR. When will you issue your full report?

Mr. REAGLE. April 13th is the day it comes before the Board.

Mr. CARR. Is that date before your next appearance before the subcommittee? We can ask you about this again.

Mr. REAGLE. We will be happy to respond to these questions at that time.

SCHOOL BUS EMERGENCY EXITS

Mr. CARR. NHTSA has published a final rule regarding minimum standards for school bus emergency exits. Apparently, the final rule will require additional exit doors, depending on the size of the bus, but the rule sidesteps the issue of emergency roof exits.

In a number of the accidents that I have seen, the bus typically rolls over on its side, such that the windows that are on the ground are unavailable for exit. If the right side of the bus rolls over, the normal entry door is unavailable for exit. The buses all have a back door, but dependent upon where the hinge is, the door is fairly heavy. The windows that are on the upright side are generally out of reach and may be reached with a little bit of climbing, but it is a vertical climb and these are kids.

It would seem to me fairly logical and fairly inexpensive to require a roof hatch. Yet NHTSA has sidestepped that requirement. There was a 1990 conference on school bus transportation which recommended that all newly manufactured school buses have the roof hatch.

Has the NTSB commented on the NHTSA rule? Do you have an opinion about this?

Mr. VOGT. We have, and as I recall we have not taken a position on the roof exit. We were concentrating at that time on the numbers of exits with respect to the seating capacity. While we have not taken a position on the roof exit, from what I have heard, we are certainly not in opposition to it.

Mr. REAGLE. That's correct. I think basically what NHTSA did in the rule was put together a formula based on capacity, as you mentioned, Mr. Chairman. Then if I remember the rule in terms of priorities, their first priority beyond the normal exits was an exit on the left side of the bus toward the rear, and then the second option was roof. As you said, they walked away from it.

Basically, the emphasis was on the number of exits as opposed to the locations.

Mr. CARR. Well, we will have an opportunity to talk to NHTSA about it, but you are saying that NTSB just hasn't taken a position on it.

Mr. LOEB. I think our position is slightly different from that. For a number of years, we fought this issue with NHTSA—you will pardon me, George—with the emergency egress being inadequate. In fact, non-school buses were required to have more egress than school buses. We pointed that out on a number of occasions.

We had discussed roof hatches. There is a problem with roof hatches, as well, because if the bus remains upright and that is where your additional escape is, on the roof, the smaller children can't get to that either. So you have a dilemma as to whether the school bus rolls over on one side or the other, or remains upright.

So what we chose to do was to try to win this battle of getting greater egress by letting NHTSA decide where to put it rather than jeopardizing it by specifying where the emergency egress goes. The Board, however, certainly would support the notion of additional roof hatches. We think there are situations in which they can be of help.

In fact, there was an accident a couple of years ago in Texas in which the school bus went over an embankment and into foul water where a roof hatch would probably have been helpful. But as I said, we struggled long and hard just to get NHTSA to accept the notion that greater egress was needed and we didn't fight the roof hatch issue at the time.

PASSIVE RESTRAINTS—USE OF AIRBAGS AND BELTS

Mr. CARR. We will ask you more questions when you complete your report on the Palm Springs accident.

Returning to passive restraints again, I should have asked this question.

Could you comment on the relationship between air bags and seat belts? It is frequently said that if the air bag is not going to be 100 percent effective—maybe not even 50 percent effective—unless you're in a full restraint seat belt. After all, apparently when air bags are tested, the manufacturers test them with the full belt. I suppose air bags are tested without seat belts, but in terms of meeting safety requirements, it is belt and bag.

Just as you have the lap belt problem with the shoulder harness that is automated, some people may erroneously believe that if there is an air bag in their car, they don't have to wear their seat belt. Is this a problem?

Mr. VOGT. I think the statutory scheme, as we were talking a few minutes ago, is to evolve into the combination of them.

George, can you elaborate on that?

Mr. REAGLE. The first thing is that the air bag's utility and benefit is only in frontal crashes. So if you have a rollover or a side impact, obviously, the air bag isn't going to help. And when you have an offset, it depends on the offset as to whether the air bag is going to go off or not.

It seems to me from all we've seen that the air bag plus the three-point belt is the best restraint system one could use.

Mr. CARR. If you were wearing seat belts, however, would you need the air bag?

Mr. REAGLE. Yes, I think you do because from a physics point of view the bag gives you more space when you're moving forward. It provides more absorption of the energy as opposed to a three-point belt where you would have two or three places take the brunt of the force.

We saw at NHTSA where at certain speeds—and I can't remember what they were—obviously an air bag is very effective. We have seen head-on collisions of people who have survived with air bag technology at very high closing speeds.

Again, that is because you have that whole area to absorb the energy.

Mr. CARR. I have already pointed out to you that you ought to check with the Ryder Trauma Center. The Ryder Trauma Center accident specialists pointed out that at least in some of the earlier model air bags that both the vent that releases the gas and its placement can cause serious injury.

Mr. REAGLE. They were at the three and nine position, right where your hands were.

Mr. CARR. Also, the seams of the bag can have some fairly rough edges, which can lacerate your arms if you are driving without a coat or a shirt.

There are some subsidiary issues on the safety of the bag itself.

Mr. SWEEDLER. These are some of the issues that are being covered in the study that is nearing completion.

DRIVER FATIGUE

Mr. CARR. The other issue that I would like to pick up on that you talked about earlier was the fatigue issue, particularly with truck drivers, but also with drivers of automobiles.

It seems to me that—and this is where I have a friendly disagreement with my friend from Virginia—commensurate with safety we ought to liberate the driver who ought to be able to drive faster. The only reason for the 55 mph speed limit originally was to save fuel and not to save lives. To an extent there is a correlation, I suppose we ought to examine that and try to make cars safer. However, particularly in rural areas where you are driving a fairly sig-

nificant stretch of highway, a 10 mph speed addition can be a very important factor in the trip time.

As a result, I can see where some under the cloak of safety might want to artificially depress highway speeds in an effort to improve the agenda of high speed rail or some other alternative mode. Trip time is an important indicator.

I would also parenthetically say that certain people who try to go 5 mph to 10 mph faster on a trip whose total distance may be 2 miles are putting a lot of people at risk needlessly because you're just not going to push the mathematics of rate, distance, and time. You just can't do it. But for people who live in rural areas, an additional 10 mph is an important factor and economic input, frankly.

But it seems to me that fatigue becomes a much more relevant factor in the overall safe operation of a vehicle, particularly some of these trucks. Are you addressing the fatigue and sleep issue? What kinds of technology and devices can we put into vehicles to put a sleep warning system on them?

It is obvious that if you're about to drift off the road, your time to recover at 55 mph is a lot better than at 65 mph.

Mr. VOGT. Fatigue is an issue across the board from highways to railroads and even long-distance flights. It is probably the single most important factor if you look back historically in accidents. At least, that is my impression.

And we are doing a fatigue study that George and Bernie are directly involved in as a combination effort of two of our major operations.

I think we're about half-way into it at this point, aren't we?

Can you elaborate on that for the chairman?

Mr. LOEB. In the heavy truck study, as I mentioned earlier, Mr. Chairman, we have investigated about 50 accidents. We will probably investigate about 100 accidents altogether. I think the first thing we want to do is understand a little bit more of the fundamentals of the things that make up and contribute to fatigue and fatigue-related accidents. Then I think we can start to look at countermeasures that may include technology, but it also may include things like changes in schedules, work habits, rest habits, and so forth. Those are the kinds of things we're looking at.

Incidentally, we are also in the beginning stage of developing a study of a similar nature in the rail industry. We are starting out there by looking at the work schedules that exist throughout the country. Then we're going to start investigating accidents to determine whether the same kinds of things we see in the trucking accidents exist or whether they are different and how they are different.

DRIVER FATIGUE AND UNIVERSITY OF MICHIGAN

Mr. CARR. In that regard, I urge you to call the folks at the University of Michigan Transportation Research Institute. I happened to be there the other day. They have a test vehicle that was really quite interesting that has very small miniaturized television cameras installed on the leading edge of the outside mirrors. They are developing a technology whereby the vehicle can identify a lane or highway violation; that is, if you are beginning to drift off the high-

way or drift through your lane, a small motor attached to the steering wheel gives you some positive feedback into the wheel that says, "Wake up."

This would be very interesting for addressing both sleep fatigue or the situation of somebody who is trying to corral some kids who are fighting in the back seat, or somebody who gets diverted because the tape player isn't working quite right. I am sure that at the outset this technology, if perfected, would be pretty costly. But, the more you can do to make sure that the vehicle doesn't wander off the road while the driver's attention is temporarily diverted through sleep or something else would be very important.

You might call them up to see if they could make a contribution to your knowledge.

Mr. LOEB. We would be glad to do that. We are aware of that technology. There are also people looking at speed change and other indicators as well of inattention or perhaps even sleep.

Mr. CARR. IVHS is going to be very important in the years ahead. We have one demonstration project—and that is not a tongue-in-cheek demonstration. This is actually to demonstrate something.

It happens to be with Oakland County, Michigan. They are going to be down here to testify shortly concerning the IVHS system we have put up in Michigan. Their initial surveys—they are going to work it up and give us a presentation—but they said that the initial survey showed a 30 percent reduction in traffic accidents as a result of the use of this IVHS technology, which in their view is not even up to really what they regard as the potential. They are learning themselves in terms of the deployment of the system.

So I hope that IVHS will have a greater bearing in what you are doing.

A few years ago, with one of your predecessors, I had the privilege of auditing an aircraft accident investigation. I will tell you that I just learned a tremendous amount about it, not only the respect for your agency but how you do your work. Hopefully, my auditing of that was not intrusive or a problem for the agency, but I would like to—if I can—get your agreement to extend that offer to anyone on our staff or any of the committee members here.

I know I told the gentleman from Virginia that NTSB extended the offer and in the first couple of accidents for a variety of reasons I couldn't go. On the other hand, it turned out tragically that the one—I happened to be in Michigan when Northwest Airlines 255 went in, and it happened to be in August, and it happened to be during a recess.

The staff was very gracious in giving me access to the deliberations and to the investigation to look at how they look for things and what they look for. The hunt for clues was most informative.

I would encourage anybody—associate staff, professional staff, members of the committee—we won't all do it at once, but it was such a tremendous learning experience, I hope you would open your hospitality to this committee to find out exactly how you do your work. It was amazing.

Mr. VOGT. Consider the invitation extended. We would welcome that.

USE OF FAA AIRCRAFT

Mr. CARR. We're not there to be intrusive or to violate any confidences or anything like that, but it was an amazing learning experience and I thank you for that invitation because I know it will improve our ability to support the work that you do.

I ask this question every year because I had a hand in the procurement of N-1, the lead aircraft for the FAA. One of the rationales for that, of course, is its support of NTSB activities.

Are you prepared to tell us about NTSB's use of N-1, or any other supporting aircraft?

Mr. VOGT. Yes.

I am going to ask Mr. Forte to give you the details of that. We used it on a number of occasions last year. We had last year for the first time ever a turn-down on the use of it, which we think was aberrational—at least in our experience it was—but that has been an extremely important aspect of our operations. And when you consider the cost of it—and I'm sure Tim can elaborate on this—of a closed runway at a major airport if we are delayed by 12 hours or so in getting there, and that means that that runway needs to be kept in a closed condition for that additional period of time. The cost then becomes a very relative kind of thing. So this is a very important aspect of our operations and has been very helpful to us.

Tim?

Mr. FORTE. Last year there were seven requests for FAA aircraft use, six of which were aviation. Five were granted and one was turned down, and one surface transportation request was granted.

We are a little concerned about some interpretation by FAA legal on OMB regulations on whether or not they will be supporting launches for surface transportation. They have said that there will be no change in their business as it pertains to aviation. Apparently, a recent director of OMB may affect how they're going to be able to support us on surface transportation.

Mr. CARR. In other words, if there is an Amtrak accident in the middle-of-nowhere, Iowa, that is not easily reachable by a commercial airline, and given the amount of equipment that you take with you and the personnel, FAA according to this OMB advisory may have to turn you down?

Mr. FORTE. That's correct, or apply some kind of cost reimbursement to the NTSB, which they have not done in the past.

"GO-TEAM"

Mr. CARR. I would think that this Committee would want to help you out in those circumstances, whether it is a pipeline matter or whether it is a transit matter.

When you launch a "go-team", how many people do you normally take with you?

Mr. FORTE. Well, we would take upwards of 16 people on a major aviation accident, but on a typical launch you would probably see eight NTSB and a couple of FAA if it is aviation.

Mr. CARR. And if it was Amtrak, you would take some Amtrak people or FRA people?

Mr. VOGT. We could probably take seven or eight people on most Amtrak investigations as well.

Mr. CARR. And a number of times I know that you have even taken law enforcement, FBI and others, who may suspect that a particular accident was a matter of sabotage or something like that.

Mr. VOGT. That's correct.

Mr. CARR. That was the Lockerbie situation.

Mr. VOGT. Right.

Mr. CARR. I might ask the staff to make some calls and perhaps prepare some letters by this committee to support your mobility. I think it is crucial. Some green eyeshade person over at OMB ought to be brought up to speed on the urgency of your requests.

Mr. FORTE. The other issue that our chairman touched on, which is being considered, is closing Hangar 6 altogether. Again, while it may delay our arrival anywhere from 12 to 24 hours on an accident site—and we do have some concerns over that as far as maintaining the integrity of the accident scene for our investigators—I think the FAA should be conscious of the potential impact. When it is an on-airport accident, it is not just a runway closure, but it is the effects in the entire ATC system and the cost to the industry of the delays that might be incurred.

Mr. CARR. This is news to me.

Mr. FORTE. It is under consideration as one of the cost-cutting measures.

AIRLINE NAVIGATION INTERFERENCE

Mr. CARR. Thank you for tipping us off to that. It is like the situation where every day in a community that there is no fire, the fire station and all the fire trucks and the fire personnel are a colossal waste of money. But we don't have them around because they make money every day. We have them around because there are emergencies which have to be taken care of. I think when the FAA comes to the committee we will want to ask some questions about their efforts to close the fire station.

There is an ongoing study, about which we are working with the FAA and the FCC. There has been some material published in *Aviation Daily*, among others. I know there are some people who are interested. The issue is the use of electronic devices on aircraft.

Have you gotten into that at all?

Mr. VOGT. We really haven't gotten into it, and we are also unaware of a correlation between the use of these devices and anomalies in the electronic systems of the aircraft. We are aware of the issue. But we really haven't investigated that.

NTSB ENFORCEMENT POWER

Mr. CARR. I have an article that appeared in the *Cleveland Plain Dealer* that basically said that the Safety Board has no teeth and went on to point out that everybody is just ignoring you and how awful it is.

Do you feel that you need more enforcement powers or stronger sanctions to get the modal administrators to pay attention, if we ever have modal administrators?

Mr. VOGT. I am going to give you a two-part answer to that.

I think the record speaks for itself and it is quite productive. We have about an 80 percent recommendation acceptance rate, and we have some wonderful success stories to tell. We also have some frustrations. And there are times when I wish I had absolutely, ultimate authority to order some modal administrator to do something that this agency believes very strongly is important.

But I think the system is working well, and I think it is an unfortunate mischaracterization to suggest that it's not. We really do have the safest transportation system in the world. I think that is apparent.

Having said that, one accident is too many. We're looking for—particularly with the new modals—a continued cooperative approach to this matter until we need to show that we do have some teeth. But we certainly appreciate all that you and your committee do because you are in a very real sense our teeth.

So we see this as a cooperative effort with the Congress and with others who are so inclined to support what we do. But I think the system is working.

Mr. CARR. I would just say that I think your powers is in your credibility and the manner in which you carry out your investigations. Obviously, modal administrators have to concern themselves with trade-offs that you do not.

Mr. VOGT. That's right.

Mr. CARR. And that is an important factor, too. You can optimize safety to the point that you extinguish opportunities. We know this in almost every mode. If we would have required the ultimate in safety, aviation probably never would have occurred at all. But people did take risks and people have given their lives to knowledge, basically, so that we have a wonderful aviation system.

But at any one time, if you wanted to stop progress in the name of safety, you probably could have.

Let me go through some of these questions.

UNDERAGE DRIVERS

Mr. CARR. Briefly back on the youth driving situation, you have made recommendations to the States for stronger laws and enforcement actions. What additional measures should be considered by the United States Congress and the Executive Branch?

Mr. VOGT. Most of the direct jurisdiction, obviously rests with the States. From a Federal point of view, I think it mainly gets to funding and money. I am going to look to both my right and left here to see if there are any cogent ideas that we could pass on to you, but the way in which money is doled out to the States, and the extent to which conditions can be placed on those funds that require compliance with these kinds of recommendations is really the most constructive thing that can be done at the Federal level.

Mr. SWEEDLER. I am aware of legislation that has been drafted over on the Senate side. I think Senator Danforth will be coming forward shortly with many of the same issues that we have raised in our youth package and it will be more of an incentive type program where the States will have an opportunity to obtain additional funding.

So I think it is a combination of the safety aspects that we can raise in working with our coalitions, and the assistance that the Congress can provide with the financial incentives. The two have shown to make a pretty good mix in the past for other safety programs.

ALCOHOL TESTING OF TRANSPORTATION EMPLOYEES

Mr. CARR. Moving to alcohol testing of transportation workers, DOT in December of last year issued a proposed regulation.

Have you had an opportunity to look over those regulations? Are you at all concerned about the regulations as they cross the modes? Are all modes being treated fairly? Do you have any comments?

Mr. LOEB. DOT has issued a truckload full of proposed rulemakings which we are now in the process of examining. They basically address the issue of alcohol testing, enlarging the existing programs to include alcohol testing and random testing for alcohol.

They do amend some post-accident test procedures, as well. Then it applies to all the modes—FTA, pipeline, rail, aviation, marine—although the legislation itself did not address some of those. Nevertheless, there has been a proposed rulemaking in all of them. The due date is sometime in April for us to respond to those. We are in the process of doing that now.

In general, we have some questions because there is a variability across the modes in a number of areas. For example, the time between drinking and working differs. There is an 8-hour rule, a 4-hour rule, and it differs between general aviation and commercial aviation, which is different in highway, which is different in rail. There are also a number of questions that address random testing in general. In specific, there are a lot of questions regarding random testing such as how frequent random testing should be.

Some of those we will be addressing in detail, and some we will not. In regard to random testing, we simply don't have the information that would enable us to respond to the DOT on what the rate of testing should be. The Board would certainly believe that that should be the lowest frequency that would still act as a deterrent. But unfortunately, we don't know what that level is. Nor do we believe there is research that establishes that right now.

So that is something that they're going to have to grapple with.

Mr. CARR. And that might be different from mode to mode.

Mr. LOEB. That is correct.

There is also an issue of the specimens that are collected. The specimen of choice now seems to be in the alcohol area of the breathalyzer, although I have seen some complaints even raised about the breathalyzer as being invasive and maybe some other tests should be done.

The Board's view has been consistently—especially in the post-accident testing arena—that we want blood to be made available. The reason for it is that it is the only way in drugs that you can determine whether impairment was an issue or not. You simply cannot do that through any urine-based screening or through any other test that I know of.

So the FRA has a program that in fact does include the testing of blood for drugs and alcohol. We think that is the best program that is out there. Our concern is that the rest of the modes are probably not going to go that way, but will try to move in the reverse direction.

That is essentially where we are on this issue right now.

RANDOM TESTING

Mr. CARR. Well, we would understand that there would be variances between the modes. Like I said, the deterrent level in certain modes would be different. Standards might be different. We know that in flight physiology, there is an altitude impact on the competition for oxygen in the bloodstream. So there would be important variations.

I would just indicate to you—and I know the ATA testified at a DOT public hearing—that the heavy 50 percent proposed random testing requirement is a real complication. Scheduling an airline is a logistical nightmare. It amazes me how they get crews and fuel and food and planes to gates and schedule that whole massive complex undertaking.

To randomly take a crew off the plane to conduct drug testing is just an enormous disruption when it is at the rate of 50 percent. I happened to be on a flight where the flight attendants were informed on their departure from a particular airport in Michigan that they were getting off at the next stop to have a drug test.

Of course, these are people who had planned a 5-day trip and suddenly that is up in the air. Actually, they were good-spirited about it. They didn't exhibit any unwillingness, but it was a matter of when, if at all, were they going to catch up with the trip they had just left on? You do this too much and you can cause an enormous nightmare, plus added cost to an industry that is already having a problem.

Mr. VOGT. As Bernie points out, where that level is between what is appropriate and still maintains the deterrents with the least amount of intrusion is something that has yet to be resolved, at least to our satisfaction.

AIRCRAFT DEICING

Mr. CARR. Relating to the deicing matter, the General Accounting Office has reviewed the FAA regulations and identified apparently two major weaknesses. The regulations allow most aircraft to be checked for ice from inside the aircraft after the holdover time has expired; and the regulations do not apply to commuter airlines.

Do you agree with the GAO's findings?

Mr. VOGT. Yes, generally, certainly in the commuter area. We think that that needs to be expanded.

As far as the inspection of the wings for ice, there is some controversy about whether you can do it from an inside look. Generally, it is agreed that the most effective way is through a tactile inspection where you actually lay your hands on it.

Tim, would you add anything to that?

Mr. FORTE. Typically now the programs include the use of both type I and type II fluids and provide the allowed holdover time, depending on the type of fluid and its dilution levels.

UNITED AIRLINES/COLORADO SPRINGS ACCIDENT

Mr. CARR. Regarding the United Airlines 585 in Colorado Springs, your accident investigation is probably the first time the NTSB really couldn't determine a probable cause. Can you discuss the difficulties NTSB had with the investigation? You folks are so

good, it probably bothered you more than anybody else that you couldn't really pin the tail on the donkey.

Mr. VOGT. I will give you my perspective on it and then I would ask Mr. Forte to comment on it.

Needless to say, there is a high frustration level. When I joined the Board it was just coming to a conclusion after investigating the accident for nearly 2 years.

I was tremendously impressed by the thoroughness of the investigation. I feel very confident that there was nothing that could have been done that wasn't done. There was a lot of cooperation from the industry. I think every aspect of it was examined. The two most likely causes were a loss of control in the rudder system, and there was some anomaly involved in one of the power control units to the rudder. But that did not rise to the level of being able to make a cause determination on that.

The other was the presence of a so-called rotor, or horizontal tornado, if you will, off the end of the runway. I think the evidence most assuredly established that there were conditions where such a rotor could exist. The anecdotal and meteorological evidence was that that could happen, and it is not uncommon in that part of the country where the high winds come over the Rockies and down onto the plains.

Boeing did a very impressive simulator modelling of what would happen to an aircraft if it proceeded into such a rotor and tracked the actual path of this aircraft.

What was missing, which I think would have led us to conclude that it was indeed a rotor, was that when you penetrate a rotor, you should get an increase in your altitude reading because there is a pressure vacuum or a lesser pressure area in the interior of the rotor. And that didn't happen.

So hypothetically, if the aircraft simply entered the outside edge of the rotor, it was questionable as to whether or not it would have the force to turn it over as the airplane turned over.

There is not much known about these rotors and how to analyze them. So the net result was that we could not, with the degree of certainty that the Board requires of itself, conclude what caused the accident. I think we all have our own opinions on what may or may not have happened, and they differ.

We had asked the FAA to monitor wind conditions in that part of the country in order to get more data on the incidents of rotors and their strength. At about the time of our hearing, they announced that they were going to go forward with that. There is some question now about whether they have the funding to do that or not. It was originally going to be in their fiscal year 1995 budget. They said that they were going to go forward with it, but now it is not that certain.

A lot of work has been done on the anomalies that were evident on this power control unit. It remains a mystery. I have my own personal view on it, but that is where we ended up.

Mr. CARR. So the FAA is proceeding if they get money from us?

Mr. VOGT. That is where we understand that stands right now.

Mr. FORTE. One of the reasons we couldn't make that leap to say that it was this meteorological event was that there is not enough factually documented information about rotors. This recommenda-

tion was to study that, particularly in the Colorado Springs area, and then we would look at the results of those studies.

Mr. CARR. Let's ask ourselves about jurisdiction for a moment.

Is the FAA the right agency to ask to undertake a meteorological study? Isn't that really something that NOAA ought to do with FAA help?

Mr. FORTE. Exactly. NOAA would be the contracting agency and it would actually be FAA funded because of the aviation-related activity.

Mr. CARR. I have long felt—and this is just my personal opinion—that NOAA and the Weather Service really ought to be a part of the Department of Transportation so that these activities are undertaken with the greatest degree of cooperation and prioritization. NOAA, sitting as it does in Commerce, I think is directed to have other priorities, frequently. That gets to be a problem.

Staff just handed me a note that the FAA has reprogrammed a small amount of fiscal year 1993 funds to actually begin the work. I would expect that we would be supportive. I know Mr. Wolf has had an interest in Rocky Mountain meteorological phenomenon for some time. I don't think we would have a great deal of a problem finding some money to help them out.

FLIGHT ATTENDANT TRAINING

The Safety Board recently urged the FAA to strengthen safety training for airline flight attendants. You also criticized the FAA for granting waivers for ongoing or follow-up training too readily and not standardizing flight attendant training program requirements.

What led you to undertake this report? Do you believe the current financial state of the industry has led the airlines to cut back on safety training?

Mr. VOGT. We have no evidence that the financial state of the industry has led to any cutbacks in the airline industry in safety training. Our concerns were about the uniformity of training of flight attendants and some of the information that we had from our accident investigations that flight attendants—while they often respond heroically—were in enough cases to raise our concerns not advised or aware of the particular safety protocols that should be followed such as locating safety equipment.

In a couple of cases, flight attendants got up out of their seats before the aircraft had come to a stop. So there was a level of concern.

We also thought that the administration by the FAA—I think we characterized it was a rule by waiver rather than by a uniform application of rules.

So our recommendations went to more hands-on training during the required annual training. For example, actually put your hands on and move doors around and to have a wet evacuation training. The FAA has disagreed with us on some of these things, although they have reacted positively to a number of our recommendations.

So we are not fully satisfied, but we think it is movement in the right direction.

Tim?

Mr. FORTE. There were several accidents where flight attendants didn't follow the prescribed procedures by the company that led us to undertake this special investigation. It pretty much held to what our chairman just said.

There is no uniformity in the application of the recurrent training and there is a provision for reductions of up to 50 percent that seem to be being applied arbitrarily. Many flight attendants did not actually have the experience of operating the emergency exits for which they were responsible.

FLIGHT ATTENDANT DUTY TIME

Mr. CARR. Do you support the legislation regulating flight attendant duty time?

Mr. VOGT. I don't think we have yet taken a position on that. I don't know to what extent we are using that in any of our fatigue studies, but we are aware of the issue. I am not sure that we have drawn any conclusions on flight attendant fatigue as a factor in some of these things that concerned us about flight attendants.

Mr. FORTE. It has not been a factor in any of our accident investigations.

Mr. CARR. Any advice you have for us in this regard would be helpful. On the one hand, we hear the clarion call of safety. On the other hand, there is a suspicion that this is really a labor/management benefits issue and a status issue for the flight attendants. If we are as important as the cockpit crew, then we ought to have the same kind of flight duty requirements.

Quite frankly, it is very easy for Members of Congress to get whipsawed on these kinds of issues. I think we all want to do the right thing. If in fact it is a safety issue, then we ought to step up to the plate and do it. If it's not, we ought to be able to say so. The only people we can turn to are the safety experts. And you are among the safety experts, so we kindly ask for your advice on this.

Mr. VOGT. I think it is fair to say that we haven't seen it as a factor.

HEAVY TRUCK ACCIDENTS

Mr. CARR. In 1990, the Safety Board completed a study of 182 commercial vehicle accidents that were fatal to truck drivers. We have gone through some of the alcohol and drug issues, but you also cited occupant protection issues and deficiencies in management oversight of vehicles and drivers.

Can you talk about that a little more? What can we do? What is the status on the recommendations resulting from your study?

Mr. VOGT. I am going to ask Mr. Sweedler to respond to that.

Mr. SWEEDLER. Interestingly enough, we worked very closely with the University of Michigan. One of the basic findings is that truck drivers were not wearing their safety belts. Quite a few of them died because they were ejected from the vehicles. We felt that use of safety belts—just a basic policy of requiring the drivers to wear their safety belts—would have saved a considerable number of lives.

We made all of our data available to the University of Michigan and we worked closely with Ken Campbell and Pat Waller. They came out with a report detailing some of the findings. They came up with some findings from our data. So it wasn't just our data. We shared with them.

It is obvious that work needs to be done to improve crashworthiness. But the main thing was that the simple fact of just wearing the safety belt would have had considerable savings.

HANDICAPPED ACCESSIBILITY

Mr. CARR. The Americans with Disabilities Act has required certain accessibility for handicapped individuals, but in particular people in wheelchairs. Some information was made available to me that a number of the people who are involved with the common carriage of people in wheelchairs, for their own sense of economies, are stacking wheelchairs three abreast sideways in vans.

The studies apparently indicate that this is done because if you put the wheelchairs in front-facing, due to geometry, you can only get two wheelchairs in. The whole idea is more productivity.

The problem, apparently, however, is that the likelihood of surviving a crash—at least a frontal crash—is greatly impaired by putting three people in a row, that the wheelchairs themselves have very little structural integrity, which then becomes a side impact to them, whereas apparently their survivability is a little better in a frontal impact.

Have you looked into this at all?

Mr. VOGT. Not that I am aware of?

Mr. CARR. I would hope that as you flag accidents to investigate you take a look at accidents that involve people in wheelchairs in common carriage. We may have inadvertently made something unsafe with the ADA and we may need to correct it.

PEGASUS ROCKET INVESTIGATION

Earlier this year, NASA had some problems in conducting a launch of the Orbital Sciences Corporation Pegasus rocket. DOT's Office of Commercial Space Transportation requested the Safety Board to conduct an investigation into the situation.

Can you tell us about the problems that occurred during the launch and why NTSB is undertaking—as I understand it—the first investigation of this mode of transportation? What issues will you be exploring?

Mr. VOGT. I'm not sure I can answer much of that, except to say that we were asked to participate. We did an initial analysis and agreed to participate. This is just really getting underway.

Tim, you might know about the specific issues. I understand that there was some miscommunication and the launch was successful.

Mr. FORTE. We are, by a Memorandum of Understanding with the Department of Transportation, the investigating agency charged with investigating commercial space launch accidents, or incidents within certain parameters, if we are requested to. This was an incident where DOT asked us to take investigate for them.

It is ongoing. The long and the short of it is that there was an abort command given just seconds before a successful launch. So we are looking into the implications of that.

RECREATIONAL BOATING ACCIDENTS

Mr. CARR. What are the recent statistics regarding recreational boating accidents? Are these accidents increasing or decreasing?

Mr. VOGT. They are very high. I don't know whether they have gone up or not, but it is a very high percentage, particularly as they relate to alcohol. We have issued a series of recommendations to the States primarily having to do with licensing recreational boat operators and to alcohol-related laws that are more comprehensive than just prohibiting impaired operation of recreational boats.

Bernie, would you like to talk about that?

Mr. LOEB. We currently have a study underway that should reach the Board next month that is looking at the issue of the use of floatation devices, the issue of a knowledge of the rules of the road, proficiency, and the issue of alcohol. Also there is an issue of what we know and don't know about recreational boating accidents because of the lack of data. There is a significant data collection problem.

The study will address all these matters and perhaps make recommendations, depending on the Board's will at that time.

Mr. SWEEDLER. We do know that a large percentage of the accidents are alcohol involved. That was one of the reasons we place the boating while intoxicated laws on our "Most Wanted" list. Mr. Chairman, 40 States now have proper legislation to deal with this. We have seen over the past 10 years a reduction in recreational boating fatalities. Obviously, it is not as much as we would like.

Mr. LOEB. The reduction is not terribly significant, unfortunately. The persistence of alcohol use is there. The laws that exist now among the 40 States that have them are extremely varied in what they require and what they set as alcohol limits, if they set them at all, and what kind of testing is done and what kind of enforcement exists.

I think those are the things that this study will address.

Mr. CARR. Thank you.

Mr. Wolf, do you have any additional questions?

RECREATIONAL BOATING ACCIDENTS BY STATE

Mr. WOLF. Yes, I do. Thank you, Mr. Chairman.

Which States do the best in boating safety and which States do the worst?

And how does Virginia do?

Mr. LOEB. I can't answer that question for you right now.

In terms of the alcohol laws?

Mr. WOLF. Yes.

Mr. SWEEDLER. Virginia does have a good boating law. They addressed the issues that we had asked.

Mr. LOEB. Maryland has a program, as well.

Mr. WOLF. For the record, provide a list of the States with the best and the worst boating laws.

[The information follows:]

The two tables below list the States with the strongest and the weakest recreational boating safety laws. States not listed are in the moderate range with regard to present boating safety laws and efforts to upgrade them.

States with Strong Boating Safety Laws
Colorado
Florida
Illinois
Indiana
Maryland
Minnesota
Ohio
Oregon

States with Weak Boating Safety Laws
Alabama
District of Columbia
Hawaii (Bill in Process)
Kentucky
Mississippi
Missouri
New Mexico
Oklahoma
South Dakota
West Virginia

CAR PHONES

Mr. WOLF. On the safety issue, what about car phones?

Mr. LOEB. We haven't looked at the issue. I have little doubt that there are probably some safety implication there, but we haven't done a study.

Mr. WOLF. Has anyone looked at it?

Mr. SWEEDLER. I think it has been looked at. In fact, I had seen a study done in Europe which indicated that it did not have a significant effect.

Mr. VOGT. Are you aware of data that would indicate that there are problems?

RECOMMENDATIONS CLASSIFIED AS UNACCEPTABLE

Mr. WOLF. No, I'm not. I was just wondering when they were talking about the radio and tape player that that would be a problem.

On the eight out of ten of your recommendations that are followed, is there a list of those that aren't followed? Is there a formal "Most Abused" list? [Laughter.]

Mr. VOGT. No, but we have very extensive records on that which Mr. Sweedler keeps. We can provide you with all kinds of data on that.

Mr. WOLF. For the record, provide a list of those recommendations which were not implemented.

[The information follows:]

Of the 9,100 safety recommendations issued by the Safety Board in the last 25 years, 7,200 have been classified as "Closed" in one status or another. Of those 7,200, 1,160 have been classified as "Closed--Unacceptable Action." A listing of these 1,160 recommendations would fill about 300 pages (just listing the recommendations without any reference to the accident or study that precipitated the recommendations.) For the Committee's use, we have included for the record, print-outs of those recommendations addressed to the DOT administrations issued since January 1, 1987, that have been classified as "Closed--Unacceptable Action." The following table shows the numbers for each of the administrations.

Administration	Recommendations Issued Since 1 Jan 1987	Closed-- Unacceptable (since 1 Jan 1987)
FAA	769	53
FHWA	97	5
NHTSA	38	2
USCG	260	33
FRA	87	6
RSPA	69	2
FTA	5	1
Totals	1325	102

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Log Number 1920
 Accident Synopsis:

ON JUNE 2, 1986, A MITSUBISHI MODEL MU-2B-35, NBCC, CRASHED AT BARTLETT, TEXAS, KILLING THE PILOT. THE NATIONAL TRANSPORTATION SAFETY BOARD'S CONTINUING INVESTIGATION OF THE ACCIDENT HAS DISCLOSED CIRCUMSTANCES WHICH ALSO APPEAR RELEVANT TO OTHER ACCIDENTS INVOLVING MITSUBISHI MU-2 AIRPLANES. SHORTLY BEFORE THE CRASH, JUST AFTER ASCENDING TO AND WHILE ATTEMPTING TO MAINTAIN HIS ASSIGNED ALTITUDE OF 9,000 FEET, THE PILOT TOLD THE HOUSTON INTERNATIONAL AIRPORT DEPARTURE CONTROLLER THAT THE AIRPLANE'S AUTOPILOT WAS PITCHING THE AIRPLANE NOSEDOWN AND THAT HE COULDN'T CONTROL THE AIRPLANE. SUBSEQUENTLY THE AIRPLANE CRASHED INTO THE GROUND AT VERY HIGH SPEED. THE MODEL M-4C AUTOPILOT INSTALLED IN THIS AIRPLANE WAS MANUFACTURED BY THE AVIONICS DIVISION OF THE BENDIX CORPORATION (ALLIED BENDIX AEROSPACE). THE AUTOPILOT INCORPORATES A PRIMARY SERVO ACTUATOR CONTAINING TWO ELECTROMAGNETIC FRICTION DRIVE CLUTCHES AND A CAPSTAN TO MOVE THE ELEVATOR, AND IT HAS AN ELEVATOR TRIM SERVO ACTUATOR WITH ELECTRICAL AND MECHANICAL CLUTCHES TO MOVE THE ELEVATOR TRIM TABS IN THE LEFT AND RIGHT ELEVATORS.

Recommendation Number	: A-B6-133
Issue Date	: January 09, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE REQUIRING PERIODIC INSPECTION, SERVICING, AND TESTING OF BENDIX M-4 AUTOPILOT SYSTEMS INSTALLED IN MITSUBISHI MU-2 AIRPLANES. COMPLIANCE WITH THIS REQUIREMENT SHOULD INCLUDE SCHEDULED REPLACEMENT OF VITAL AUTOPILOT MECHANICAL ACCESSORIES SUCH AS SERVO MOTORS, ELECTROMAGNETIC CLUTCHES, AND CLUTCH BRUSH ASSEMBLIES IN ACCORDANCE WITH THE MANUFACTURERS' MAINTENANCE RECOMMENDATIONS.

Log Number 1872
 Accident Synopsis:

ON MARCH 22, 1985, A SWEARINGEN SA 226TC AIRPLANE, OPERATED AS SUN AIR FLIGHT 534, MADE AN UNINTENTIONAL GEAR-UP LANDING AT LOS ANGELES INTERNATIONAL AIRPORT, LOS ANGELES, CA. OF THE 14 OCCUPANTS ON BOARD, ONLY 1 PERSON, A PASSENGER WHO WAS SEATED IN THE PLANE OF ROTATION OF THE RIGHT ENGINE PROPELLER, WAS SERIOUSLY INJURED. THE INJURY RESULTED WHEN PIECES OF THE ENGINE PROPELLER BLADES PENETRATED THE SIDE OF THE AIRPLANE CABIN AND STRUCK THE PASSENGER. ON JANUARY 9, 1983, REPUBLIC AIRLINES, FLIGHT 927, A CONVAIR 580, TOUCHED DOWN ON A SNOW-COVERED RUNWAY AT BRAINERD, MINNESOTA, AND STRUCK A 2- TO 3-FOOT HIGH SNOWBANK NEAR THE RIGHT EDGE OF THE RUNWAY, OF THE 33 OCCUPANTS ON BOARD, 1 PASSENGER WAS KILLED AND 1 PASSENGER WAS INJURED SERIOUSLY WHEN A BROKEN PROPELLER BLADE PENETRATED THE CABIN. BOTH OF THESE PASSENGERS WERE SEATED IN THE PLANE OF ROTATION OF THE ENGINE PROPELLER BLADES. MORE RECENTLY, ON OCTOBER 30, 1986, A PASSENGER SEATED IN THE PROPELLER PLANE OF ROTATION ABOARD A WINGS WEST, SA 226TC SUFFERED INJURIES TO THE RIGHT LEG WHEN A PIECE OF THE RIGHT PROPELLER BLADE WENT THROUGH THE FUSELAGE AFTER THE AIRPLANE MADE A GEAR UP LANDING AT SANTA BARBARA, CALIFORNIA. THIS ACCIDENT IS STILL UNDER INVESTIGATION BY THE NATIONAL TRANSPORTATION SAFETY BOARD.

Recommendation Number	: A-87-001
Issue Date	: January 20, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: INITIATE ACTION TO EVALUATE THE FEASIBILITY OF INCORPORATING DESIGN FEATURES IN NEW PROPELLER-POWERED AIRPLANES, WHICH, IN THE EVENT OF A PROPELLER BLADE SEPARATION OR FRACTURE, WOULD REDUCE THE POTENTIAL FOR INJURY TO PERSONS SEATED IN AREAS WITHIN THE PLANE OF ROTATION OF THE ENGINE PROPELLERS OR WHICH WOULD PROVIDE FOR PASSENGER SEATING ARRANGEMENTS TOTALLY OUTSIDE OF THE PLANE OF PROPELLER ROTATION.

Recommendation Number	: A-87-002
Issue Date	: January 20, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: IF IT IS DETERMINED THAT DESIGN FEATURES CAN BE INCORPORATED IN NEW PROPELLER-POWERED AIRPLANES THAT WILL REDUCE THE POTENTIAL OF INJURY TO PERSONS SEATED IN AREAS WITHIN THE PLANE OF ROTATION OF ENGINE PROPELLERS OR THAT WILL PROVIDE FOR PASSENGER SEATING ARRANGEMENTS TOTALLY OUTSIDE THE PLANE OF PROPELLER ROTATION, TAKE THE NECESSARY ACTION TO INCLUDE THESE FEATURES INTO 14 CFR 25 DESIGN REQUIREMENTS.

Log Number 1942
 Accident Synopsis:

SINCE CONDUCTING ITS SPECIAL INVESTIGATION OF RUNWAY INCURSIONS AT CONTROLLED AIRPORTS IN THE UNITED STATES IN 1985 AND 1986, THE NATIONAL TRANSPORTATION SAFETY BOARD HAS NOTED THE CONTINUING OCCURRENCE OF AIR TRAFFIC CONTROL (ATC) OPERATIONAL ERRORS COMMITTED BY CONTROL PERSONNEL IN THE CHICAGO O'HARE INTERNATIONAL AIRPORT CONTROL TOWER. AS A RESULT OF ITS INVESTIGATION OF A NEAR-COLLISION BETWEEN TWO AIR CARRIER AIRPLANES AT A RUNWAY INTERSECTION WHILE BOTH WERE TAKING OFF ON MAY 17, 1986.

Recommendation Number	: A-87-004
Issue Date	: February 06, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REVIEW ITS PERSONNEL SELECTION AND PROMOTION PROGRAMS AT THE CHICAGO O'HARE AIR TRAFFIC CONTROL FACILITY TO MAKE SURE THAT APPLICANTS HAVE PREVIOUS EXPERIENCE WORKING IN A TOWER CAB TO QUALIFY FOR SELECTION TO BE SUPERVISORY AIR TRAFFIC CONTROL POSITION IN THE TOWER CAB.

Recommendation Number : A-87-005
 Issue Date : February 06, 1987
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

REVIEW THE METHODOLOGY USED TO ESTABLISH AIRPORT ENGINEERED PERFORMANCE STANDARDS AND THE CRITERIA USED TO ESTABLISH THE "HIGH DENSITY RULE" AT THE CHICAGO O'HARE AIR TRAFFIC CONTROL FACILITY TO ENSURE THAT AIR TRAFFIC CONTROLLER STAFFING LEVELS AND PERFORMANCE LIMITATIONS ARE ACCOUNTED FOR APPROPRIATELY AND THAT THE AIR TRAFFIC CONTROLLER TEAM CAPABILITIES ARE NOT EXCEEDED DURING PEAK TRAFFIC PERIODS.

Log Number 1954
 Accident Synopsis:

ABOUT 2050 ON MARCH 13, 1986, SIMMONS AIRLINES FLIGHT 1746, AN EMBRAER BANDEIRANTE, EMB-110P1, OPERATING AS A REGULARLY SCHEDULED FLIGHT, DEPARTED THE DETROIT METROPOLITAN AIRPORT EN ROUTE TO SAULT STE. MARIE, MICHIGAN, WITH A STOP IN ALPENA, MICHIGAN. THE EN ROUTE PORTION OF THE FLIGHT TO ALPENA WAS UNEVENTFUL. HOWEVER, DUE TO THE PREVAILING INSTRUMENT METEOROLOGICAL CONDITIONS, THE CREW WAS UNABLE TO COMPLETE THE INSTRUMENT LANDING SYSTEM (ILS) APPROACH AND LAND AND THEY DECLARED A MISSED APPROACH AT 2142. AT 2153, THE FLIGHT WAS CLEARED FOR A SECOND ILS APPROACH TO ALPENA. AT 2156, THE CREW ACKNOWLEDGED THAT RADAR SERVICES WERE BEING TERMINATED. THIS WAS THE LAST TRANSMISSION FROM THE AIRPLANE. ABOUT 2215, A MOTORIST REPORTED THAT THE AIRPLANE HAD CRASHED. THE AIRPLANE WAS FOUND IN A WOODED AREA ABOUT 300 FEET TO THE LEFT OF THE EXTENDED CENTERLINE, AND 1 1/2 MILES SHORT OF THE THRESHOLD OF RUNWAY 1 AT ALPENA. THE AIRPLANE WAS DESTROYED AND TWO OF THE SEVEN PASSENGERS AND ONE OF THE TWO CREWMEMBERS ON BOARD WERE KILLED.

Recommendation Number : A-87-013
 Issue Date : March 17, 1987
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REEXAMINE 14 CFR 91.11(A)(1) IN THE LIGHT OF RECENT FINDINGS ON THE EFFECTS OF ALCOHOL CONSUMPTION ON PILOT PERFORMANCE, AND CARRY OUT THE RESEARCH NEEDED TO ESTABLISH THE MINIMUM AMOUNT OF TIME, FOLLOWING ALCOHOL CONSUMPTION, REQUIRED BY PILOTS TO PERFORM THEIR DUTIES WITHOUT IMPAIRMENT.

Log Number 1918
 Accident Synopsis:

THE NOSE COMPARTMENT BAGGAGE DOORS IN PIPER PA-34 SENECA AIRPLANES HAVE A HISTORY OF OPENING INFLIGHT. SINCE 1974, SUCH OCCURRENCES HAVE RESULTED IN 10 REPORTED ACCIDENTS OR INCIDENTS (SEE ATTACHMENT). ADDITIONALLY, THE DISCOVERY OF BAGGAGE DOOR CONDITIONS THAT DID OR COULD CAUSE SUCH A HAZARD RESULTED IN 34 SERVICE DIFFICULTY REPORTS (SDRS) BEING SUBMITTED TO THE FEDERAL AVIATION ADMINISTRATION (FAA). SEVERAL OF THE REPORTS REFER TO DELAMINATION OF THE DOOR, CRACKING OF THE FIBERGLASS IN THE AREA OF THE DOOR HINGE, AND FAULTY DOOR LATCHING/LOCKING MECHANISMS. ALSO, IN SEVERAL CASES, THE BAGGAGE DOOR, OR THE CONTENTS FROM THE BAGGAGE COMPARTMENT, STRUCK AND DAMAGED THE PROPELLER, WINDSHIELD, OR THE CONTENTS FROM THE BAGGAGE COMPARTMENT, STRUCK AND DAMAGED THE PROPELLER, WINDSHIELD, OR EMPENNAGE AFTER SEPARATING FROM THE AIRPLANE INFLIGHT. THE NATIONAL TRANSPORTATION SAFETY BOARD IS CONCERNED THAT SIMILAR CIRCUMSTANCES MAY HAVE BEEN A FACTOR IN SOME CATASTROPHIC SENECA ACCIDENTS WHERE THE PROBABLE CAUSE INCLUDED THE FINDING "DESIGN STRESS LIMITS OF AIRCRAFT EXCEEDED," AS WELL AS IN CERTAIN OTHER FATAL SENECA ACCIDENTS THAT HAVE OCCURRED FOR "UNDETERMINED REASONS."

Recommendation Number	: A-87-024
Issue Date	: March 19, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ENCOURAGE, BY DIRECT LETTER OR GENERAL ADVISORY, AVIATION AFTERMARKET SUPPLIERS, DESIGNERS, MANUFACTURERS, AND HOLDERS OF EXISTING SUPPLEMENTAL TYPE CERTIFICATES TO DESIGN AND DEVELOP NOSE COMPARTMENT BAGGAGE DOORS WITH IMPROVED SAFETY CHARACTERISTICS FOR THE PIPER SENECA AND OTHER AIRPLANES. THE IMPROVED DOORS SHOULD INCORPORATE HIGHLY RELIABLE LATCHING/LOCKING MECHANISMS AND BE FAILSAFE; THAT IS, NO DEGRADATION OF FLIGHT CONTROL SHOULD OCCUR EVEN IF THE DOOR SHOULD BECOME UNLATCHED (AJAR) INFLIGHT.

Log Number 1968

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Accident Synopsis:

SOUTHERN AIR TRANSPORT'S (SAT) LOGAIR 15 FLIGHT, A LOCKHEED L-382G, WAS CLEARED FOR TAKEOFF FROM KELLY AIR FORCE BASE, TEXAS, ON AN INSTRUMENT FLIGHT PLAN TO WARNER ROBBINS AIR FORCE BASE, GEORGIA, AT ABOUT 0405 ON 10/4/86. VISUAL METEOROLOGICAL CONDITIONS PREVAILED. THERE WERE THREE FLIGHTCREW MEMBERS ABOARD THE MILITARY CONTRACTED DOMESTIC CARGO FLIGHT OPERATING UNDER 14 CFR PART 121. ALL COMMUNICATIONS WITH THE AIR TRAFFIC CONTROL TOWER WERE ROUTINE. RADAR RECORDED THAT THE AIRPLANE REACHED AN ALTITUDE OF ABOUT 700 FEET ABOVE GROUND LEVEL. WITNESSES REPORTED AN ABNORMALLY STEEP CLIMB ATTITUDE FOLLOWED BY A TURN AND/OR BANK TO THE LEFT, AFTER WHICH THE AIRPLANE CONTINUED TO ROLL TO THE LEFT AND STRUCK THE RAMP AREA AT ABOUT A 90 DEGREE ANGLE TO THE DEPARTURE RUNWAY IN A NEAR INVERTED ALTITUDE BETWEEN TWO HANGARS AND EXPLODED. A SEVERE GROUND FIRE ENSUED. ALL THREE FLIGHTCREW MEMBERS WERE KILLED.

Recommendation Number	:	A-87-034
Issue Date	:	May 11, 1987
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE NATIONAL REQUIRED INSPECTION PROGRAM TO REQUIRE A SPECIFIED NUMBER OF EN ROUTE INSPECTIONS FOR EACH TYPE OF AIRCRAFT OPERATED BY AN AIR CARRIER.

Log Number 1959

Accident Synopsis:

ON MARCH 30, 1987, A PIPER PA-28-181, N819IV, CRASHED FOLLOWING AN IN-FLIGHT WING SEPARATION AT THE WING ROOT ATTACHMENT WHILE IN CRUISE FLIGHT AT LOW ALTITUDE NEAR MARLIN, TEXAS. THE PILOT, THE SOLE OCCUPANT, RECEIVED FATAL INJURIES. THE AIRPLANE, WHICH WAS OWNED AND OPERATED BY GRIFFIN PIPELINE PATROL COMPANY, WAS PATROLLING A PIPELINE RIGHT OF WAY AT THE TIME OF THE ACCIDENT.

Recommendation Number	:	A-87-041
Issue Date	:	April 10, 1987
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: BASED ON THE INSPECTION DESCRIBED IN SAFETY RECOMMENDATION A-87-40, ESTABLISH A RECURRENT PERIODIC INSPECTION OF THE WING ROOT AREA FOR CRACKS BY AN APPROVED METHOD TO IDENTIFY THOSE CRACKS BEFORE THEY BECOME CRITICAL.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Log Number 1973

Accident Synopsis:

ON NOVEMBER 10, 1985, ABOUT 1722 EASTERN STANDARD TIME, A HANCOCK BRANDS, INC., DASSAULT FALCON, D450 JET AND AN AIR PEGASUS FLYING CLUB PIPER ARCHER, PA28-181, COLLIDED ABOUT 1,500 FEET OVER THE TOWNS OF FAIRVIEW AND CLIFFSIDE PARK, NEW JERSEY. THE D450 WAS CLEARED FOR A STANDARD INSTRUMENT APPROACH PROCEDURE IN VISUAL METEOROLOGICAL CONDITIONS AND WAS IN A LEFT TURN TO POSITION ITSELF ON THE DOWNWIND LEG TO RUNWAY 19 AT THE TETERBORO AIRPORT, AND THE PA28 WAS TRANSITING THE AIRPORT TRAFFIC AREA FROM WEST TO EAST WHEN THEY COLLIDED. THE ACCIDENT OCCURRED 4 1/2 MILES EAST-SOUTHEAST AT THE EDGE OF THE AIRPORT TRAFFIC AREA IN VISUAL METEOROLOGICAL CONDITIONS. BOTH AIRPLANES HAD BEEN IN RADIO CONTACT WITH THE TETERBORO CONTROL TOWER. THE FLIGHTCREW, THE ONLY OCCUPANTS ABOARD THE D450, AND THE PILOT AND TWO PASSENGERS ONBOARD THE PA28 WERE KILLED. THE D450 CRASHED INTO AN APARTMENT BUILDING KILLING ONE RESIDENT AND SERIOUSLY INJURING TWO BYSTANDERS.

Recommendation Number	:	A-B7-048
Issue Date	:	May 22, 1987
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE A GENERAL NOTICE (GENOT) TO ALL AIR TRAFFIC CONTROL FACILITIES REQUIRING THE ESTABLISHMENT OF PREFERRED ROUTES FOR VFR AIRCRAFT THAT REQUEST TO TRANSIT THE AIRPORT TRAFFIC AREA. THESE ROUTINGS SHOULD TAKE INTO ACCOUNT TRAFFIC PATTERN ALTITUDES, INSTRUMENT DEPARTURE AND ARRIVAL ROUTES AND ALTITUDES, PROMINENT LANDMARKS, AND OTHER OPERATIONAL CONSIDERATIONS UNIQUE TO THAT FACILITY.

Log Number 1931

Accident Synopsis:

ON AUGUST 27, 1986, THE PILOT OF A CESSNA MODEL P210N, NS135A, WAS SERIOUSLY INJURED AND THE AIRPLANE WAS SUBSTANTIALLY DAMAGED AFTER THE AIRPLANE SUSTAINED AN ENGINE FAILURE IN FLIGHT AND CRASHED AT SALTON CITY, CALIFORNIA. ALTHOUGH DAMAGE TO THE ENGINE WAS MINIMAL, ATTEMPTS TO RESTART IT WERE UNSUCCESSFUL DURING THE COURSE OF THE SAFETY BOARD'S INVESTIGATION OF THE ACCIDENT. WHILE THE SAFETY BOARD'S INVESTIGATION HAS NOT YET BEEN COMPLETED, BENCH TESTS DISCLOSED THAT THE AIRPLANES' LEFT AND RIGHT SLICK MODEL 6220 PRESSURIZED MAGNETOS WERE INOPERATIVE. EACH MAGNETO HAD BEEN OPERATED FOR ABOUT 400 HOURS AT THE TIME OF THE ACCIDENT. UPON DISASSEMBLY, THE MAGNETOS WERE FOUND TO BE CONTAMINATED WITH MOISTURE, RUST, AND NYLON PARTICLES; AND THE MAGNETO FRAME, DISTRIBUTOR BAR, AND HIGH VOLTAGE COIL ON EACH UNIT EXHIBITED EVIDENCE OF SEVERE ELECTRICAL ARCING. AFTER NEW MAGNETOS WERE INSTALLED, THE ENGINE STARTED AND OPERATED SATISFACTORILY.

Recommendation Number	:	A-B7-058
Issue Date	:	May 15, 1987
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE APPLICABLE TO CESSNA MODELS TU206, T207N, AND P210N AIRPLANES WITH SLICK MODEL 6220 MAGNETOS AND TO CESSNA MODEL 303 AIRPLANES WITH BOTH SLICK MODEL 6220 AND 6224 MAGNETOS TO REQUIRE THE INCORPORATION OF APPROPRIATE SYSTEM DESIGN CHANGES TO PREVENT CONTAMINATION AND ELECTRICAL ARCING IN THESE MAGNETOS.

Log Number 1996

Accident Synopsis:

ON NOVEMBER 6, 1986, A PIPER PA-23 APACHE, N218SP, WAS CLEARED FOR AN INSTRUMENT LANDING SYSTEM (ILS) APPROACH TO RUNWAY 36L AT TAMPA INTERNATIONAL AIRPORT, FLORIDA. THE PILOT WAS UNABLE TO LAND DURING HIS FIRST APPROACH. ON THE SECOND APPROACH, THE APACHE TOUCHED DOWN ON TAXIWAY W, PARALLEL TO AND ABOUT 406 FEET TO THE RIGHT (EAST) OF RUNWAY 36L. AT THE SAME TIME, A PAN AMERICAN BOEING B-727 WAS PROCEEDING SOUTHBOUND ON TAXIWAY W. WHEN THE CAPTAIN OF THE B-727 WAS THE APACHE EMERGE FROM THE FOG DIRECTLY AHEAD OF HIM, HE TURNED TO THE RIGHT IN AN ATTEMPT TO AVOID THE IMPENDING COLLISION. ABOUT 2 SECONDS LATER, THE APACHE'S LEFT ENGINE STRUCK THE B-727 IN THE RADOME. TWO PASSENGERS AND A FLIGHT ATTENDANT WERE INJURED AFTER THEY EVACUATED THE AIRPLANE. THE APACHE WAS ALMOST DESTROYED AND THE PILOT, THE SOLE OCCUPANT OF THE AIRPLANE, WAS KILLED.

Recommendation Number	:	A-87-090
Issue Date	:	August 07, 1987
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND 14 CFR 91.116 TO REQUIRE THAT, FOR INSTRUMENT APPROACHES TO RUNWAYS WITH OPERATING RUNWAY VISUAL RANGE (RVR) EQUIPMENT AT THE APPROACH END, NO PILOT MAY CONTINUE AN APPROACH PAST THE FINAL APPROACH FIX UNLESS THE RVR IS EQUAL TO OR MORE THAN THE MINIMUM VISIBILITY PRESCRIBED FOR THAT APPROACH PROCEDURE.

Log Number 2003

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Accident Synopsis:

ON JULY 8, 1987, AT 1626 UNIVERSAL COORDINATED TIME (UCT), DELTA AIRLINES FLIGHT 37 (DL 37), A LOCKHEED L-1011-250, FLEW WITHIN APPROXIMATELY 30 FEET OF CONTINENTAL AIRLINES FLIGHT 25 (CO 25), A BOEING 747-200. BOTH AIRPLANES WERE WESTBOUND AT FLIGHT LEVEL 310. THE INCIDENT OCCURRED IN A NONRADAR ENVIRONMENT, IN AIRSPACE CONTROLLED BY GANDER OCEANIC CONTROL, NEAR COORDINATES 52 DEGREE N AND 40 DEGREE W. THE COORDINATES CORRESPOND TO A POSITION ON TRACK D, THE NORTH ATLANTIC TRACK (NAT) TO WHICH CO 25 HAD BEEN ASSIGNED. PRELIMINARY EVIDENCE INDICATES THAT DL 37, WHICH HAD BEEN ASSIGNED NAT C, DEVIATED OVER 60 MILES FROM THE TRACK BEFORE IT ATTEMPTED TO RESUME ITS ASSIGNED COURSE.

Recommendation Number	: A-87-105
Issue Date	: September 01, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THAT DURING OCEANIC CROSSINGS, FLIGHTCREWS OF U.S. OPERATORS WHO ENGAGE IN TRANSOCEANIC TRANSPORT UNDER 14 CFR 121, EMPLOY AT LEAST TWO INITIAL AND THREE EN ROUTE VERIFICATION TECHNIQUES, EACH DIFFERENT FROM THE OTHERS, THAT WILL PROVIDE ADEQUATE PROTECTION AGAINST THE USE OF INCORRECT NAVIGATION INFORMATION.

Log Number 2014

Accident Synopsis:

ON OCTOBER 25, 1986, PIEDMONT AIRLINES FLIGHT 467, A BOEING 737-222, N752N, WAS A REGULARLY SCHEDULED FLIGHT OPERATING UNDER 14 CFR 121 FROM NEWARK INTERNATIONAL AIRPORT TO MYRTLE BEACH, SOUTH CAROLINA, WITH AN EN ROUTE STOP AT CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT, CHARLOTTE, NORTH CAROLINA. THERE WERE 114 PASSENGERS AND 5 CREWMEMBERS ON BOARD. THE FLIGHT WAS ROUTINE UNTIL ITS ARRIVAL INTO THE CHARLOTTE AREA, WHERE INSTRUMENT METEOROLOGICAL CONDITIONS PREVAILED. AT 2004:17, THE FLIGHT WAS CLEARED FOR THE INSTRUMENT LANDING SYSTEM APPROACH (ILS) TO RUNWAY 36R. THE AIRPLANE TOUCHED DOWN AT 2007:19 AND ABOUT 2007:43 IT DEPARTED THE RUNWAY. THE AIRPLANE STRUCK THE LOCALIZER ANTENNA ARRAY LOCATED ABOUT 300 FEET FROM THE DEPARTURE END OF THE RUNWAY, STRUCK A CONCRETE CULVERT LOCATED 18 FEET BEYOND THE LOCALIZER, AND CONTINUED THROUGH A CHAIN LINK FENCE. IT CAME TO REST UPON THE EDGE OF RAILROAD TRACKS LOCATED 440 FEET FROM THE DEPARTURE END OF THE RUNWAY. THE AIRPLANE WAS DESTROYED, 3 PASSENGERS SUSTAINED SERIOUS INJURIES, AND 3 CREWMEMBERS AND 28 PASSENGERS SUSTAINED MINOR INJURIES IN THE ACCIDENT.

Recommendation Number	: A-87-108
Issue Date	: October 16, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN OPERATIONS BULLETIN TO PRINCIPAL OPERATIONS INSPECTORS OF AIR CARRIERS OPERATING AIRCRAFT WITH FLIGHT ATTENDANTS INFORMING THEM OF THE NEED TO CEASE PROVIDING ALCOHOL TO PASSENGERS WHO ARE IN, OR APPEAR THAT THEY ARE ABOUT TO BE IN, AN INTOXICATED STATE.

Log Number 2021

Accident Synopsis:

ON MARCH 31, 1987, ABOUT 0958 LOCAL TIME, A CESSNA 172 THAT HAD DEPARTED METROPOLITAN OAKLAND INTERNATIONAL AIRPORT (OAK) COLLIDED WITH A PIPER PA-32 CARGO FLIGHT THAT WAS CLEARED TO LAND AT THE AIRPORT. VISUAL METEOROLOGICAL CONDITIONS PREVAILED. THE COLLISION OCCURRED AT AN APPROXIMATE ALTITUDE OF 1,000 FEET MSL, ABOUT 1 MILE NORTH OF THE DEPARTURE END OF RUNWAY 33. THE AIRPLANES WERE DESTROYED, ALL THREE PERSONS ON THE AIRPLANES WERE KILLED, AND ONE PERSON ON THE GROUND WAS INJURED AS A RESULT OF THE COLLISION.

Recommendation Number	: A-87-114
Issue Date	: December 08, 1987
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AT AIR TRAFFIC CONTROL FACILITIES THAT ARE CLOSED AT REGULAR INTERVALS, SCHEDULE ROUTINE MAINTENANCE ON CRITICAL PIECES OF EQUIPMENT ONLY DURING PERIOD WHEN THE FACILITY USING THAT EQUIPMENT IS CLOSED.

Log Number 2036

Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD INVESTIGATED AND EVALUATED 59 EMERGENCY MEDICAL SERVICE (EMS) HELICOPTER ACCIDENTS THAT OCCURRED BETWEEN MAY 11, 1978, AND DECEMBER 3, 1986. WHILE EXPLORING THIS RAPIDLY GROWING COMMERCIAL EMS INDUSTRY AND ITS OPERATION, THE SAFETY BOARD CONCENTRATED ON THE INFLUENCE OF WEATHER ON EMS OPERATIONS, EMS HELICOPTER OPERATIONS UNDER INSTRUMENT FLIGHT RULES/VISUAL FLIGHT RULES (IFR/VFR), PILOT AND MEDICAL PERSONNEL TRAINING REQUIREMENTS, AND EMS HELICOPTER DESIGN STANDARDS AND AIRCRAFT RELIABILITY. IN ADDITION, THE SAFETY BOARD REVIEWED EMS HELICOPTER CRASHWORTHINESS AND ITS INFLUENCE ON ACCIDENT SURVIVAL AND THE INFLUENCE OF EMS HELICOPTER PROGRAM MANAGEMENT ON SAFETY.

Recommendation Number	: A-88-009
Issue Date	: February 29, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THAT THOSE PERSONNEL CLASSIFIED AS REQUIRED CREWMEMBERS OPERATING EMERGENCY MEDICAL SERVICE HELICOPTERS WEAR PROTECTIVE CLOTHING AND EQUIPMENT TO REDUCE THE CHANCE OF INJURY OR DEATH IN SURVIVABLE ACCIDENTS. THIS CLOTHING AND EQUIPMENT SHOULD INCLUDE PROTECTIVE HELMETS, FLAME- AND HEAT-RESISTANT FLIGHT SUITS, AND PROTECTIVE FOOTWEAR.

Log Number 2037
Accident Synopsis:

ON JANUARY 20, 1987, ABOUT 1228, CENTRAL STANDARD TIME, A U.S. ARMY BEECH U-21A AIRPLANE, ARMY 18061, AND A SACHS ELECTRIC COMPANY PIPER PA-31-350, N60SE, COLLIDED AT 7,000 FEET M.S.L. OVER THE LAKE CITY ARMY AMMUNITION PLANT, INDEPENDENCE, MISSOURI, ABOUT 5 MILES EAST OF THE EASTERN BOUNDARY OF THE KANSAS CITY TERMINAL CONTROL AREA. THE U-21 WAS LEVEL AT 7,000 AND EN ROUTE TO FORT LEAVENWORTH, KANSAS, IN ACCORDANCE WITH INSTRUMENT FLIGHT RULES (IFR). THE PA-31 WAS CLIMBING EASTBOUND TO AN UNKNOWN CRUISE ALTITUDE, HAVING DEPARTED THE KANSAS CITY DOWNTOWN AIRPORT IN ACCORDANCE WITH VISUAL FLIGHT RULES (VFR), EN ROUTE TO ST. LOUIS, MISSOURI. THE AIRPLANES COLLIDED NEARLY HEAD-ON IN DAYLIGHT AND VISUAL METEOROLOGICAL CONDITIONS. ALTHOUGH BOTH AIRPLANES WERE EQUIPPED WITH OPERATING MODE-C TRANSPONDERS, THE RADAR CONTROLLERS IN COMMUNICATION WITH THE U-21 DID NOT OBSERVE AND WERE NOT ALERTED TO THE CONFLICT. THEREFORE, TRAFFIC ADVISORIES WERE NOT PROVIDED. AS A RESULT OF THE ACCIDENT, TWO PILOTS AND ONE PASSENGER ABOARD THE U-21 AND THE PILOT AND TWO PASSENGERS ABOARD THE PA-31 WERE FATALLY INJURED.

Recommendation Number	: A-88-024
Issue Date	: February 25, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: UPDATE ADVISORY CIRCULAR 90-48C AND EMPHASIZE IN OPERATIONAL BULLETINS, THE AIRMAN'S INFORMATION MANUAL, PILOT TRAINING PROGRAMS, AND ACCIDENT PREVENTION PROGRAMS THE ADVANTAGES OF USING AIR TRAFFIC CONTROL FLIGHT-FOLLOWING SERVICES ON VISUAL FLIGHT RULES FLIGHTS AS A FURTHER MEANS OF REDUCING THE MIDAIR COLLISION HAZARD.

Log Number 2010

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Accident Synopsis:

ON FEBRUARY 22, 1986, A BEECH G-18S, N74FA, OPERATED BY K-AIRWAYS, INC., OF KENOSHA, WISCONSIN, CRASHED NEAR COPPER HILL, TENNESSEE, DURING MANEUVERING FLIGHT IN INSTRUMENT METEOROLOGICAL CONDITIONS. THE AIRPLANE, WHICH WAS ON AN UNSCHEDULED DOMESTIC AIR CARGO FLIGHT AND WHICH WAS EN ROUTE TO ATLANTA, GEORGIA, FROM MILWAUKEE, WISCONSIN, WAS DESTROYED BY COLLISION WITH TREES AND MOUNTAINOUS TERRAIN AND POSTCRASH FIRE. THE ONLY PERSON ABOARD, AN AIRLINE TRANSPORT-RATED PILOT, WAS FATALY INJURED. THE SAFETY BOARD DETERMINED THAT THE PILOT, WHO HAD A 0.158 PERCENT BLOOD ALCOHOL CONCENTRATION AT THE TIME OF HIS DEATH, BECAME SEVERELY IMPAIRED DURING THE FLIGHT DUE TO A COMBINATION OF ALCOHOL INTOXICATION AND FATIGUE.

Recommendation Number	: A-88-036
Issue Date	: March 24, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE COMMERCIAL OPERATORS TO COLLECT OR TO CAUSE THE COLLECTION OF TOXICOLOGICAL SPECIMENS FROM SURVIVING CREWMEMBERS INVOLVED IN REPORTABLE AIRCRAFT INCIDENTS OR ACCIDENTS.

Log Number 2000

Accident Synopsis:

ON JUNE 20, 1987, BOTH PERSONS ABOARD A 1963 BEECH MUSKETEEER MODEL 23, N2387J, WERE KILLED WHEN THE AIRPLANE SUSTAINED AN ENGINE STOPPAGE AND CRASHED AT MIRAMAR, FLORIDA, JUST AFTER TAKEOFF FROM THE NORTH PERRY AIRPORT, HOLLYWOOD, FLORIDA. THE NATIONAL TRANSPORTATION SAFETY BOARD'S INVESTIGATION OF THE ACCIDENT DISCLOSED THE PRESENCE OF WATER IN BOTH THE LEFT AND RIGHT FUEL TANKS. THE FUEL CAP SEALS HAD DETERIORATED, AND BOTH THE LEFT AND RIGHT FUEL CAP/ADAPTER ASSEMBLIES WERE FOUND TO LEAK APPRECIABLY WHEN WATER WAS APPLIED OVER THE RECESSED FUEL FILLER COMPARTMENTS ON THE UPPER SURFACE OF THE WINGS. CORROSION WAS EVIDENCED IN THE WING SUMP AND FUEL FILTER DRAINS, A CONDITION WHICH MADE THE LATTER DRAIN SOMEWHAT DIFFICULT TO OPERATE.

Recommendation Number	: A-88-039
Issue Date	: March 15, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE APPLICABLE TO BEECH 19-, 23-, AND 24- SERIES AIRPLANES THAT WERE MANUFACTURED 10 OR MORE YEARS AGO REQUIRING AT THE NEXT ANNUAL OR 100-HOUR INSPECTION, WHICHEVER OCCURS FIRST AND ANNUALLY THEREAFTER, THAT THE FUEL CAP/ADAPTER ASSEMBLIES ON THESE AIRPLANES BE INSPECTED AND PRESSURE-TESTED FOR LEAKAGE. THE WING SUMP AND FUEL FILTER DRAINS ALSO SHOULD BE CHECKED TO ENSURE THAT THEY OPEN AND CLOSE EASILY AND DRAIN PROPERLY.

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Number	: A-88-040
Issue Date	: March 15, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE APPLICABLE TO 1963 BEECH MUSKETEER MODEL 23 AIRPLANES (SERIAL NOS. M-1 THROUGH M-554) REQUIRING AT THE NEXT ANNUAL OR 100-HOUR INSPECTION, WHICHEVER OCCURS FIRST, COMPLIANCE WITH BEECHCRAFT SERVICE INSTRUCTIONS NO. 0801-287, REVISION 1, CONCERNING FUEL CAP/ADAPTER ASSEMBLIES HAVING IMPROVED SEALING CAPABILITIES.

Log Number 2023
 Accident Synopsis:

ON NOVEMBER 23, 1987, AT 6:25 P.M., ALASKAN STANDARD TIME, RYAN AIR SERVICE, INC., (RYAN AIR) FLIGHT 103, A BEECHCRAFT 1900C, N401RA, WITH 2 FLIGHT CREWMEMBERS AND 19 PASSENGERS ON BOARD, CRASHED SHORT OF RUNWAY 3 AT HOMER AIRPORT, HOMER, ALASKA. FLIGHT 103 WAS A REGULARLY SCHEDULED 14 CFR PART 135 FLIGHT OPERATING BETWEEN KODIAK AND ANCHORAGE, ALASKA, WITH INTERMEDIATE STOPS AT HOMER AND KEMAI, ALASKA. SIXTEEN PASSENGERS AND THE TWO FLIGHT CREWMEMBERS WERE FATALLY INJURED. THREE PASSENGERS RECEIVED SERIOUS INJURIES.

Recommendation Number	: A-88-041
Issue Date	: March 14, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND 14 CFR PART 135 TO REQUIRE THAT COMMUTER AIR CARRIER CERTIFICATE HOLDERS MAINTAIN, FOR AT LEAST 90 DAYS, COPIES OF THE COMPLETED LOAD MANIFEST AND THE WEIGHT AND BALANCE DOCUMENTATION THAT SUPPORT THE CALCULATED TOTAL WEIGHT OF THE AIRCRAFT AND ITS CENTER OF GRAVITY LOCATION.

Log Number 1997

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Accident Synopsis:

ON JUNE 14, 1987, A MOONEY AIRCRAFT CORPORATION (MOONEY) MODEL M20K (231), N4047H, CRASHED AT THE JEFFERSON COUNTY AIRPORT, BROOMFIELD, COLORADO, AFTER THE AIRPLANE'S BAGGAGE DOOR POPPED OPEN DURING TAKEOFF. TWO OF THE THREE PERSONS ABOARD THE AIRPLANE WERE KILLED; THE THIRD PERSON WAS INJURED SERIOUSLY. WITNESSES REPORTED SEEING THE AIRPLANE'S BAGGAGE DOOR OPEN DURING THE TAKEOFF ROLL. AFTER TAKEOFF, AT AN ALTITUDE OF ABOUT 100 FEET, THE AIRPLANE WAS OBSERVED TO PITCH UP AND ROLL TOWARD THE LEFT TO A NEAR VERTICAL BANK BEFORE CRASHING. THE BAGGAGE DOOR WAS FOUND NEAR THE WRECKAGE WITH THE EXTERIOR HANDLE IN THE CLOSED AND LOCKED POSITION AND THE INTERIOR HANDLE UNLATCHED.

Recommendation Number	:	A-88-054
Issue Date	:	April 26, 1988
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THE MOONEY AIRCRAFT CORPORATION TO INCLUDE ON ALL PREFLIGHT CHECKLISTS APPLICABLE TO M20J AND M20K AIRPLANES A REFERENCE TO, AND INSTRUCTIONS FOR CHECKING, THE AUXILIARY EXIT HANDLE/COVER ASSEMBLY. THE POSSIBILITY OF A BAGGAGE DOOR OPENING IN FLIGHT, PARTICULARLY DURING THE CRITICAL TAKEOFF AND LANDING PHASES, AND THE SPECIFIC ACTIONS A PILOT SHOULD TAKE TO MINIMIZE THE POTENTIAL HAZARDS OF SUCH AN OCCURRENCE, SHOULD BE DISCUSSED IN PILOT OPERATING HANDBOOKS (POH) APPLICABLE TO ALL MOONEY M20 SERIES AIRPLANES. REVISIONS TO CHECKLISTS AND POHS, AS APPROPRIATE, SHOULD BE MAILED DIRECTLY TO ALL OWNER/ OPERATORS OF THESE AIRPLANES.

Log Number 2061

Accident Synopsis:

ON AUGUST 3, 1986, AT 12:35 P.M., A BELL 206B HELICOPTER, N49606, OWNED AND OPERATED BY JOE FOSTER EXCAVATING, INC., DANVILLE, CALIFORNIA, CRASHED IN A WOODED AREA IN ALAMO, CALIFORNIA, WHILE CIRCLING A RESIDENCE. VISUAL METEOROLOGICAL CONDITIONS PREVAILED AT THE TIME. THE PILOT AND PASSENGER, THE OWNER OF THE HELICOPTER, SUSTAINED FATAL INJURIES; THE HELICOPTER WAS DESTROYED.

Recommendation Number	:	A-88-059
Issue Date	:	June 06, 1988
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THAT PERSONS APPLYING FOR SPECIAL-ISSUANCE MEDICAL CERTIFICATES UNDER THE PROVISIONS OF TITLE 14 CODE OF FEDERAL REGULATIONS 67.19 PROVIDE EVIDENCE THAT ANY REQUESTED CARDIOVASCULAR EVALUATIONS WERE PERFORMED BY A PHYSICIAN CERTIFIED BY THE AMERICAN BOARD OF CARDIOLOGY AND THAT A RECOGNIZED STANDARD PROTOCOL WAS USED IN ANY RELATED STRESS ELECTROCARDIOGRAM EXAMINATION.

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Recommendation Number	: A-88-060
Issue Date	: June 06, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: INSTITUTE PROCEDURES AND ASSOCIATED RECORDKEEPING TO SHOW THAT THE FEDERAL AIR SURGEON OR A MEDICAL CONSULTANT(S), AT LEAST ONE OF WHOM IS RECOGNIZED AND CERTIFIED IN THE MEDICAL DISCIPLINE UNDER CONSIDERATION, REVIEW ALL TREATING PHYSICIAN(S) DIAGNOSIS BEFORE ISSUING A MEDICAL CERTIFICATE UNDER THE PROVISIONS OF TITLE 14 CODE OF FEDERAL REGULATIONS 67.19.

Log Number 2067
Accident Synopsis:

ABOUT 2046 EASTERN DAYLIGHT TIME ON AUGUST 16, 1987, NORTHWEST AIRLINES, INC., FLIGHT 255 CRASHED SHORTLY AFTER TAKING OFF FROM RUNWAY 3 CENTER AT THE DETROIT METROPOLITAN WAYNE COUNTY AIRPORT (DETROIT-METRO), ROMULUS, MICHIGAN. FLIGHT 255, A MCDONNELL DOUGLAS DC-9-82, U.S. REGISTRY N312RC, WAS A REGULARLY SCHEDULED PASSENGER FLIGHT AND WAS EN ROUTE TO PHOENIX, ARIZONA. ACCORDING TO WITNESSES, FLIGHT 255 BEGAN ITS TAKEOFF ROTATION ABOUT 1,200 TO 1,500 FEET FROM THE END OF THE RUNWAY AND LIFTED OFF NEAR THE END OF THE RUNWAY. AFTER LIFTOFF, THE WINGS OF THE AIRPLANE ROLLED TO THE LEFT AND THE RIGHT ABOUT 35 DEGREES IN EACH DIRECTION. THE AIRPLANE COLLIDED WITH OBSTACLES NORTHEAST OF THE RUNWAY WHEN THE LEFT WING STRUCK A LIGHT POLE LOCATED 2,760 FEET BEYOND THE END OF THE RUNWAY. THEREAFTER THE AIRPLANE STRUCK OTHER LIGHT POLES, THE ROOF OF A RENTAL CAR FACILITY, AND THEN THE GROUND. IT CONTINUED TO SLIDE ALONG A PATH ALIGNED GENERALLY WITH THE EXTENDED CENTERLINE OF THE TAKEOFF RUNWAY. THE AIRPLANE BROKE UP AS IT SLID ACROSS THE GROUND AND POSTIMPACT FIRES ERUPTED ALONG THE WRECKAGE PATH. AND NUMEROUS VACANT VEHICLES IN A RENTAL CAR PARKING LOT ALONG THE AIRPLANE'S PATH WERE DESTROYED BY IMPACT FORCES AND/OR FIRE. OF THE PERSONS ON BOARD FLIGHT 255, 148 PASSENGERS AND 6 CREWMEMBERS WERE KILLED; 1 PASSENGER, A 4 YEAR-OLD CHILD, WAS INJURED SERIOUSLY. ON THE GROUND, TWO PERSONS WERE KILLED, ONE PERSON WAS INJURED SERIOUSLY, AND FOUR PERSONS SUFFERED MINOR INJURIES.

Recommendation Number	: A-88-068
Issue Date	: June 27, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: CONVENE A HUMAN PERFORMANCE RESEARCH GROUP OF PERSONNEL FROM THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, INDUSTRY, AND PILOT GROUPS TO DETERMINE IF THERE IS ANY TYPE OR METHOD OF PRESENTING A CHECKLIST WHICH PRODUCES BETTER PERFORMANCE ON THE PART OF USER PERSONNEL.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Log Number 2068

Accident Synopsis:

ON MAY 26, 1987, AT 4:45 P.M., AIR NEW ORLEANS, DOING BUSINESS AS CONTINENTAL EXPRESS FLIGHT 962, DEPARTED RUNWAY 19 AT NEW ORLEANS INTERNATIONAL AIRPORT ON A SCHEDULED COMMUTER FLIGHT TO EGLIN AIR FORCE BASE, FLORIDA. THERE WERE TWO PILOTS AND NINE PASSENGERS ONBOARD AT THE TIME. AS THE AIRPLANE REACHED AN ALTITUDE OF 150 TO 200 FEET ABOVE GROUND LEVEL, THE CREW FELT A SEVERE YAWING MOTION AND OBSERVED THE ENGINE TORQUE FLUCTUATE ERRATICALLY. THE CAPTAIN PROCEEDED TO MAKE AN EMERGENCY LANDING IN THE DEPARTURE OVERRUN OF RUNWAY 19. FOLLOWING ONE BOUNCE AND FINAL TOUCHDOWN, MAXIMUM BRAKING AND FULL REVERSE THRUST WERE APPLIED. THE AIRPLANE THEN ROLLED OFF THE OVERRUN, ACROSS AN AIRPORT ACCESS ROAD, THROUGH AN AIRPORT SECURITY FENCE, THROUGH A CONCRETE HIGHWAY BARRIER, AND ACROSS A HIGHWAY. THE AIRPLANE STRUCK SEVERAL VEHICLES ON THE ROADWAY DURING THE ACCIDENT SEQUENCE. THE MAIN WRECKAGE CAME TO REST IN A PARKING LOT ON THE OTHER SIDE OF THE HIGHWAY. THE CREW AND PASSENGERS EVACUATED SAFELY AND THERE WAS NO FIRE. TWO PASSENGERS ABOARD THE AIRPLANE SUFFERED SERIOUS INJURIES. IN ADDITION, BOTH PILOTS, SEVEN PASSENGERS, AND TWO OCCUPANTS OF GROUND VEHICLES RECEIVED MINOR INJURIES. THE AIRPLANE WAS DESTROYED.

Recommendation Number	:	A-88-072
Issue Date	:	June 28, 1988
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN ADVISORY CIRCULAR TO COMMERCIAL OPERATORS RECOMMENDING THE USE OF A PROCEDURAL CHECKLIST THAT INCORPORATES HUMAN ENGINEERING DESIGN CRITERIA FOR SIZE AND STYLE OF PRINT.

Log Number 2072

Accident Synopsis:

ON MAY 21, 1988, THE CAPTAIN OF AN AMERICAN AIRLINES MCDONNELL DOUGLAS DC-10-30 AIRPLANE EXECUTED A REJECTED TAKEOFF (RTO) FROM RUNWAY 35L AT THE DALLAS-FORT WORTH REGIONAL AIRPORT, TEXAS, FOLLOWING A TAKEOFF WARNING ALMOST SIMULTANEOUS WITH THE "V1" CALL AND AN ILLUMINATION OF A "FLAP/SLAT DISAGREE" LIGHT. IN RESPONSE TO THE RTO PROCEDURES, THE AIRPLANE DECELERATED NORMALLY FOR 5 TO 6 SECONDS, SLOWING FROM 178 KNOTS, THE MAXIMUM GROUND SPEED, TO ABOUT 130 KNOTS. AT THAT POINT, THE DECELERATION DECAYED RAPIDLY, RESULTING IN THE AIRPLANE DEPARTING THE END OF THE RUNWAY AT A GROUND SPEED OF ABOUT 97 KNOTS. THE NOSE GEAR COLLAPSED IN SOFT GROUND AND THE PLOWING ACTION OF THE NOSE SLOWED THE AIRPLANE TO A STOP ABOUT 1,000 FEET BEYOND THE END OF THE RUNWAY. THE FIRST OFFICER AND THE FLIGHT ENGINEER RECEIVED SERIOUS INJURIES; THE CAPTAIN AND 5 OF THE 240 PASSENGERS SUFFERED MINOR INJURIES. DAMAGE TO THE AIRPLANE WAS SO EXTENSIVE THAT REPAIR MAY NOT BE ECONOMICALLY PRACTICAL.

Recommendation Number	:	A-88-077
Issue Date	:	July 11, 1988
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THAT MCDONNELL DOUGLAS CORPORATION REDESIGN THE FLAP/SLAT DISAGREE LOGIC OF THE DC-10 AIRPLANE (ALL MODELS) TAKEOFF WARNING SYSTEM AS NECESSARY TO ELIMINATE THE PROBABILITY OF A NUISANCE WARNING.

Log Number 2099
Accident Synopsis:

ON MARCH 4, 1987, FISCHER BROS. AVIATION, INC., DOING BUSINESS AS NORTHWEST AIRLINK, FLIGHT 2268, A CONSTRUCCIONES AERONAUTICAS, S.A. (CASA) C-212-CC, N160FB, CRASHED JUST INSIDE THE THRESHOLD OF RUNWAY 21R AT THE DETROIT METROPOLITAN WAYNE COUNTY AIRPORT IN ROMULUS, MICHIGAN. NINE OF THE 19 PERSONS ON BOARD WERE KILLED. THE AIRPLANE WAS DESTROYED BY IMPACT FORCES AND POSTCRASH FIRE. ON MAY 8, 1987, EXECUTIVE AIR CHARTER, INC., DOING BUSINESS AS AMERICAN EAGLE, FLIGHT 5452, A CASA C-212-CC, CRASHED SHORT OF RUNWAY 9 WHILE ON A VISUAL APPROACH TO THE AIRPORT AT MAYAGUEZ, PUERTO RICO, IN VISUAL METEOROLOGICAL CONDITIONS. BOTH CREWMEMBERS WERE KILLED AND THE FOUR PASSENGERS SUSTAINED MINOR INJURIES. THE AIRPLANE WAS DESTROYED BY IMPACT FORCES AND POSTCRASH FIRE.

Recommendation Number	: A-88-099
Issue Date	: October 17, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REISSUE TO OPERATIONS AND MAINTENANCE INSPECTORS FEDERAL AVIATION ADMINISTRATION NOTICE N8320.301 OF SEPTEMBER 17, 1984, PROMPTED BY SAFETY BOARD RECOMMENDATION A-84-15.

Recommendation Number	: A-88-101
Issue Date	: October 17, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND TITLE 14 CODE OF FEDERAL REGULATIONS 23.207 AND 25.207 TO REQUIRE A STALL WARNING DEVICE AND ELIMINATE THE USE OF "INHERENT AERODYNAMIC QUALITIES" (AERODYNAMIC BUFFETING) AS A STALL WARNING.

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Log Number 21018
 Accident Synopsis:

ON FEBRUARY 3, 1988, AMERICAN AIRLINES FLIGHT 132, A MCDONNELL DOUGLAS DC-9-83, DEPARTED DALLAS/FORT WORTH INTERNATIONAL AIRPORT, TEXAS, FOR NASHVILLE METROPOLITAN AIRPORT, TENNESSEE. IN ADDITION TO THE PASSENGER LUGGAGE IN THE MIDCARGO COMPARTMENT, FLIGHT 132 WAS LOADED WITH A 104 POUND FIBER DRUM OF TEXTILE TREATMENT CHEMICALS. UNDECLARED AND IMPROPERLY PACKAGED HAZARDOUS MATERIALS INSIDE THE FIBER DRUM INCLUDED 5 GALLONS OF HYDROGEN PEROXIDE SOLUTION AND 25 POUNDS OF A SODIUM ORTHOSILICATE-BASED MIXTURE. WHILE IN FLIGHT, A FLIGHT ATTENDANT AND A DEADHEADING FIRST OFFICER NOTIFIED THE COCKPIT CREW OF SMOKE IN THE PASSENGER CABIN. THE PASSENGER CABIN FLOOR ABOVE THE CARGO COMPARTMENT WAS HOT AND SOFT, AND THE FLIGHT ATTENDANTS HAD TO MOVE PASSENGERS FROM THE AFFECTED AREA. THE CAPTAIN, WHO WAS AWARE OF A MECHANICAL DISCREPANCY WITH THE AUXILIARY POWER UNIT (APU) ON AN EARLIER FLIGHT WHICH RESULTED IN IN-FLIGHT FUMES, WAS SKEPTICAL ABOUT THE FLIGHT ATTENDANT'S REPORT OF SMOKE. NO IN-FLIGHT EMERGENCY WAS DECLARED. AFTER LANDING, THE CAPTAIN NOTIFIED NASHVILLE GROUND CONTROL ABOUT THE POSSIBILITY OF FIRE IN THE CARGO COMPARTMENT, AND HE REQUESTED FIRE EQUIPMENT. THE FLIGHT ATTENDANTS THEN INITIATED PROCEDURES TO EVACUATE THE AIRPLANE ON THE TAXIWAY. ABOUT 2 MINUTES 8 SECONDS AFTER THE PLANE LANDED, THE 120 PASSENGERS AND 6 CREWMEMBERS BEGAN EVACUATING THE AIRPLANE. AFTER THE PLANE WAS EVACUATED, CRASH/FIRE/RESCUE PERSONNEL EXTINGUISHED THE FIRE IN THE CARGO COMPARTMENT.

Recommendation Number	: A-88-125
Issue Date	: October 24, 1988
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REVIEW THE CERTIFICATION OF ALL TYPES OF CARGO COMPARTMENTS TO IDENTIFY ANY ALUMINUM OR OTHER COMPONENTS THAT FAIL TO MEET THERMAL PROTECTION REQUIREMENTS AT LEAST EQUAL TO CARGO COMPARTMENT LINER THERMAL PROTECTION REQUIREMENTS. REQUIRE THAT ALL SAFETY DEFICIENCIES BE CORRECTED.

Log Number 2117
 Accident Synopsis:

ON JANUARY 20, 1989, THE RIGHT ENGINE SEPARATED FROM THE WING OF A BOEING 737-201, N242US, OPERATED AS PIEDMONT AIRLINES FLIGHT 1480, AS THE AIRPLANE LIFTED OFF RUNWAY 27L AT THE CHICAGO O'HARE INTERNATIONAL AIRPORT, CHICAGO, ILLINOIS. THE FLIGHTCREW CONTINUED THE TAKEOFF AND RETURNED THE AIRPLANE TO THE AIRPORT WHERE AN EMERGENCY SINGLE ENGINE LANDING WAS ACCOMPLISHED WITHOUT FURTHER INCIDENT. THE AIRPLANE WAS STOPPED ON THE RUNWAY AND THE REMAINING ENGINE WAS SHUT DOWN. THERE WERE NO INJURIES TO ANY OF THE 6 CREWMEMBERS OR 27 PASSENGERS ABOARD THE AIRPLANE. THE SEPARATED ENGINE FELL ON AIRPORT PROPERTY APPROXIMATELY 800 FEET PAST THE DEPARTURE END OF RUNWAY 27L.

Recommendation Number	: A-89-002
Issue Date	: January 26, 1989
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE FOR BOEING 737-100 AND -200 SERIES AIRPLANES TO REQUIRE THAT THE OPERATORS OF THESE AIRPLANES INSPECT THE ENGINE NACELLE FAIRINGS BEFORE EACH FLIGHT TO VERIFY THAT THE AFT CONE BOLT IS INTACT ON EACH ENGINE UNTIL THE AFT ENGINE MOUNTS HAVE BEEN MODIFIED TO INCLUDE THE NEW SECONDARY SUPPORT STRUCTURE.

Log Number 1992

Accident Synopsis:

AT 2125 ON FEBRUARY 19, 1988, AN AVAIR INC. (AVAIR) FAIRCHILD METRO III, N622AV, OPERATING AS AVAIR FLIGHT 3378, CRASHED IN CARY, NORTH CAROLINA, SHORTLY AFTER IT DEPARTED RUNWAY 23R AT RALEIGH-DURHAM INTERNATIONAL AIRPORT (RDU), MORRISVILLE, NORTH CAROLINA, WITH 2 FLIGHTCREW MEMBERS AND 10 PASSENGERS ON BOARD. THE AIRPLANE STRUCK WATER WITHIN 100 FEET OF THE SHORELINE OF A RESERVOIR, ABOUT 5,100 FEET WEST OF THE MIDPOINT OF RUNWAY 23R. THE AIRPLANE WAS DESTROYED AND ALL 12 PERSONS ON BOARD WERE KILLED.

Recommendation Number	: A-89-D16
Issue Date	: April 14, 1989
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: CONVENE A GOVERNMENT/INDUSTRY GROUP TO EXAMINE ISSUES RELATED TO AIR CARRIER OPERATOR SICK LEAVE POLICIES FOR PILOTS AND TO MAKE APPROPRIATE RECOMMENDATIONS ON SUCH SICK LEAVE POLICIES THAT THE FEDERAL AVIATION ADMINISTRATION CAN INCORPORATE INTO AN ADVISORY CIRCULAR FOR AIR CARRIER OPERATORS' GUIDANCE AND USE.

Log Number 2150

Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD HAS COMPLETED A SPECIAL INVESTIGATION FOLLOWING AN AIR TRAFFIC CONTROL (ATC) OPERATIONAL ERROR INVOLVING THE COAST TERMINAL RADAR APPROACH CONTROL (TRACON) THAT OCCURRED ON FEBRUARY 13, 1989, ABOUT 1908 PACIFIC STANDARD TIME. THE OPERATIONAL ERROR RESULTED IN THE LOSS OF STANDARD ATC SEPARATION BETWEEN BRITISH AIRWAYS FLIGHT 282 (BAW282), A BOEING B-747, AND AMERICAN AIRLINES FLIGHT 1262 (AAL1262), A BRITISH AERO SPACE 146, WHEN BOTH AIRPLANES PASSED NEAR THE SEAL BEACH, CALIFORNIA, VORTAC AT 9,000 FEET MSL.

Recommendation Number	: A-89-D38
Issue Date	: May 23, 1989
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: POSTPONE IMPLEMENTATION OF THE SOUTHERN CALIFORNIA TERMINAL AIRSPACE REALIGNMENT (STAR) PROJECT AND THE TRANSFER OF CONTROL SECTORS 21 AND 22 FROM LOS ANGELES AIR ROUTE TRAFFIC CONTROL CENTER TO THE COAST TERMINAL RADAR APPROACH CONTROL (TRACON) UNTIL THE COAST TRACON STAFFING LEVEL OF FULL PERFORMANCE LEVEL AIR TRAFFIC CONTROLLERS HAS INCREASED TO 75 PERCENT OF THE NUMBER AUTHORIZED, AND UNTIL THE FACILITY HAS BEEN EXPANDED OR RELOCATED TO ACCOMMODATE THE INCREASED NUMBER OF RADAR POSITIONS ASSOCIATED WITH THE STAR PROJECT.

Recommendation Number : A-89-043
 Issue Date : May 23, 1989
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: CONDUCT A SYSTEM SAFETY AND EFFICIENCY REVIEW OF THE SOUTHERN CALIFORNIA BASIN AREA AND THE FACILITIES THAT PROVIDE AIR TRAFFIC CONTROL SERVICES IN THIS HIGH TRAFFIC DENSITY AREA. THE REVIEW SHOULD FOCUS ON THE ADEQUACY OF REGIONAL AIRSPACE SYSTEM PLANS--CONTROL FACILITIES; EQUIPMENT AND TECHNOLOGY; AIRWAYS AND AIRSPACE DESIGN; CONTROLLER STAFFING AND TRAINING; AND OPERATIONAL PROCEDURES--TO ACCOMMODATE THE CURRENT AND FORECAST INCREASE IN AIR TRAFFIC.

Log Number 2093
 Accident Synopsis:

ON MAY 5, 1988, A CESSNA MODEL 208 CARAVAN I TURBOPROPELLER AIRPLANE, N88TJ, EXPERIENCE SEVERE SHIMMYING OF THE NOSE WHEEL ASSEMBLY DURING LANDING AT THE ORLANDO INTERNATIONAL AIRPORT, ORLANDO, FLORIDA. SUBSEQUENTLY, MAINTENANCE PERSONNEL DETERMINED THAT THE NOSE LANDING GEAR SHIMMY DAMPENER HAD FAILED AND THAT CRACKS WERE PRESENT IN THE LOWER PORTION OF THE ENGINE MOUNT RING NEAR THE LEFT AND RIGHT POINTS OF ATTACHMENT TO THE NOSE LANDING GEAR. OPERATORS OF OTHER CESSNA CARAVAN I AIRPLANES HAVE SINCE ADVISED THE SAFETY BOARD OF SEVERAL SIMILAR OCCURRENCES OF CRACKED ENGINE MOUNT RINGS RESULTING FROM SHIMMY OF THE NOSE LANDING GEAR. THE SAFETY BOARD BELIEVES THAT IF THESE CRACKS HAD GONE UNDETECTED AND HAD BEEN ALLOWED TO DEVELOP THROUGH THE MOUNT RING, THEY MIGHT HAVE INDUCE OCCURRENCE OF THE "WHIRL MODE" PHENOMENON OR MIGHT HAVE OTHERWISE RESULTED IN SEPARATION OF THE ENGINE FROM THE AIRCRAFT.

Recommendation Number : A-89-052
 Issue Date : July 07, 1989
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE THE CESSNA AIRCRAFT COMPANY TO ISSUE A SUPPLEMENT TO THE MAINTENANCE MANUALS FOR ALL CARAVAN I MODEL 208, 208A, AND 208B AIRPLANES REQUIRING AN INSPECTION FOR CRACKS IN THE LOWER PORTION OF THE ENGINE MOUNT RINGS NEAR THE POINTS OF ATTACHMENT TO THE NOSE LANDING GEAR WHENEVER SHIMMY OF THE NOSE LANDING GEAR OCCURS.

Log Number 2139
 Accident Synopsis:

ON NOVEMBER 13, 1988, A PIPER PA-28-181 (ARCHER), N8342L, REGISTERED TO AND OPERATED BY TAJ FBO CORPORATION OF BRUNSWICK, GEORGIA, CRASHED ADJACENT TO RUNWAY 7 WHILE ATTEMPTING A MISSED APPROACH FROM AN ILS APPROACH AT THE JACKSONVILLE INTERNATIONAL AIRPORT, JACKSONVILLE, FLORIDA. THE FLIGHT WAS CONDUCTED AS AN AIR TAXI UNDER THE PROVISIONS OF TITLE 14 CODE OF FEDERAL REGULATIONS (CFR) PART 135. THE AIRCRAFT WAS DESTROYED, AND THE PILOT AND HIS THREE PASSENGERS WERE KILLED.

Recommendation Number	: A-89-135
Issue Date	: December 07, 1989
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND 14 CFR 135.63(C) TO REQUIRE OPERATORS OF SINGLE-ENGINE AIRCRAFT TO COMPLY WITH THE REQUIREMENTS THEREIN FOR PREPARATION OF A LOAD MANIFEST BEFORE EACH TAKE OFF.

Log Number 2187
 Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD IS CONCERNED THAT, IN THE LAST 18 MONTHS, THERE HAVE BEEN THREE NEAR-MISS COLLISIONS SOUTHWEST OF LOS ANGELES, CALIFORNIA, INVOLVING INTERNATIONAL AIR CARRIER FLIGHTS AND GENERAL AVIATION AIRPLANE. IN EACH CASE, AIR TRAFFIC CONTROLLERS ALERTED THE AIR CARRIER FLIGHTCREWS TO THE PRESENCE OF THE OTHER UNKNOWN TRAFFIC AND A POTENTIAL CATASTROPHE WAS NARROWLY AVERTED. THE SAFETY BOARD BELIEVES THESE INCIDENTS, WHICH HAVE MARKED SIMILARITIES, EXEMPLIFY AN UNSAFE SITUATION FOR INTERNATIONAL AIR CARRIER FLIGHTS ARRIVING IN THE LOS ANGELES AREA FROM THE SOUTHWEST.

Recommendation Number	: A-89-139
Issue Date	: December 20, 1989
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REVIEW PREFERENTIAL ARRIVAL ROUTES AT MAJOR AIRPORTS WHERE THERE IS A TERMINAL CONTROL AREA (TCA) AND MODIFY, AS APPROPRIATE, THOSE ROUTES OR PROCEDURES TO ENSURE THAT AIR CARRIER AIRPLANES ENTER THE TCA AT OR NEAR THE UPPER VERTICAL LIMIT.

Log Number 2148
Accident Synopsis:

ACCIDENT STATISTICS OF THE NATIONAL TRANSPORTATION SAFETY BOARD INDICATE THAT CARBURETOR ICING CONTINUES TO BE A SIGNIFICANT FACTOR IN GENERAL AVIATION ACCIDENTS. AS A RESULT, THE SAFETY BOARD EXAMINED POTENTIAL MEASURES THAT COULD BE TAKEN TO ALLEVIATE THE ROLE OF CARBURETOR ICING IN GENERAL AVIATION ACCIDENTS. AFTER CONSULTING WITH REPRESENTATIVES OF THE GENERAL AVIATION MANUFACTURERS ASSOCIATION (GAMA) AND THE AIRCRAFT OWNERS AND PILOTS ASSOCIATION (AOPA), THE SAFETY BOARD HAS IDENTIFIED POSITIVE, PREVENTIVE ACTION THAT THE FEDERAL AVIATION ADMINISTRATION (FAA) AND GAMA SHOULD TAKE TO GREATLY REDUCE ACCIDENTS RELATED TO CARBURETOR ICE.

Recommendation Number : A-89-140
Issue Date : January 08, 1990
Addressee : FAA
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND, AS NECESSARY, IN CONJUNCTION WITH THE GENERAL AVIATION MANUFACTURERS ASSOCIATION AND THE AIRFRAME MANUFACTURERS, THE DESCENT AND BEFORE-LANDING CHECKLISTS IN THE PILOT'S OPERATING HANDBOOKS AND AIRPLANE FLIGHT MANUALS OF CARBURETOR-EQUIPPED AIRPLANES TO REQUIRE THE USE OF FULL CARBURETOR HEAT WHEN ENGINE POWER IS REDUCED BELOW THE NORMAL CRUISE POWER RANGE (THE GREEN ARC ON THE TACHOMETER OR THE MANIFOLD PRESSURE GAUGE), OR BELOW AN ALTERNATE ENGINE POWER SETTING AS DETERMINED BY THE MANUFACTURER.

Recommendation Number : A-89-142
Issue Date : January 08, 1990
Addressee : FAA
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REVISE, AS NECESSARY, AND DISTRIBUTE ADVISORY CIRCULAR 20-113 ON ENGINE INDUCTION SYSTEM ICING TO ALL CERTIFICATED PILOTS, FLIGHT INSTRUCTORS, AND FLIGHT SCHOOLS.

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Log Number 2218
 Accident Synopsis:

ON MAY 21, 1988, A MCDONNELL DOUGLAS CORPORATION DC-10-30 (AMERICAN AIRLINES FLIGHT AA70, N136AA) OVERRAN RUNWAY 35L DURING A REJECTED TAKEOFF (RTO) AT THE DALLAS-FORT WORTH INTERNATIONAL AIRPORT, TEXAS. NO FIRE OCCURRED, BUT THE AIRPLANE WAS DAMAGED BEYOND ECONOMICAL REPAIR. THE FIRST OFFICER AND FLIGHT ENGINEER SUSTAINED SERIOUS INJURIES, AND THE CAPTAIN SUSTAINED MINOR INJURIES DURING THE ACCIDENT. AN INSPECTOR WITH THE FEDERAL AVIATION ADMINISTRATION (FAA), WHO OCCUPIED THE JUMPSEAT, AND 11 FLIGHT ATTENDANTS WERE NOT INJURED. OF THE 239 REVENUE PASSENGERS 5 SUSTAINED MINOR INJURIES DURING THE EMERGENCY EVACUATION.

Recommendation Number	: A-90-015
Issue Date	: March 15, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: CONFIRM THAT THE DC-10 AIRPLANE IS FLYABLE DURING A TAKEOFF WITH ASYMMETRIC OUTBOARD LEADING EDGE SLATS; IF VALID, REQUIRE AIR CARRIER OPERATORS TO IMPLEMENT A TRAINING PROGRAM FOR ALL DC-10 PILOTS THAT EMPHASIZES THAT THE DC-10 AIRPLANE IS FLYABLE WITH ASYMMETRIC OUTBOARD LEADING EDGE SLATS.

Log Number 2168
 Accident Synopsis:

ON APRIL 15, 1989, A CESSNA 152, N93748, CRASHED ON FINAL APPROACH TO RUNWAY 28 AT THE DUPAGE AIRPORT, WEST CHICAGO, ILLINOIS. THE STUDENT PILOTS, THE SOLE OCCUPANT, WAS FATALLY INJURED, AND THE AIRPLANE WAS DESTROYED. THE STUDENT PILOT, WHO HAD FLOWN 33 TOTAL HOURS, HAD BEEN PRACTICING APPROACHES AND FULL-STOP LANDINGS IN THE TRAFFIC PATTERN FOR ABOUT 30 MINUTES. ON THE FOURTH CIRCUIT OF THE TRAFFIC PATTERN, THE STUDENT PILOT WAS FOLLOWING ANOTHER CESSNA 152, N6497M (N97M), THE PILOT OF WHICH WAS CONDUCTING TOUCH-AND-GO LANDINGS; ALSO, THE PILOT OF A BEECHCRAFT KING AIR 90, N20, WAS HOLDING SHORT OF RUNWAY 28 AWAITING CLEARANCE FOR TAKEOFF.

Recommendation Number	: A-90-017
Issue Date	: March 13, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE AIR TRAFFIC CONTROL HANDBOOK, 7110.6SF, TO REQUIRE THAT STUDENT PILOT IDENTIFICATION BE PASSED BETWEEN AIR TRAFFIC CONTROL FACILITIES AFTER INITIAL RECEIPT OF THE IDENTIFICATION.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Recommendation Number : A-90-018
 Issue Date : March 13, 1990
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE AIR TRAFFIC CONTROL HANDBOOK, 7110.65F, TO INCLUDE GUIDELINES AND CONTROLLER RESPONSIBILITIES FOR PROVIDING ADDITIONAL ASSISTANCE AND SERVICE TO STUDENT PILOTS.

Recommendation Number : A-90-019
 Issue Date : March 13, 1990
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE AIRMAN'S INFORMATION MANUAL TO INCLUDE GUIDELINES AND CONTROLLER RESPONSIBILITIES FOR PROVIDING ADDITIONAL ASSISTANCE AND SERVICE TO STUDENT PILOTS SO THAT THE STUDENT PILOTS WILL KNOW WHAT TO EXPECT FROM AIR TRAFFIC CONTROL WHEN THEY IDENTIFY THEMSELVES AS STUDENT PILOTS.

Log Number 2123

Accident Synopsis:

ON NOVEMBER 9, 1988, A CESSNA 152, N65788, CRASHED SHORTLY AFTER TAKEOFF ON RUNWAY 1D AT THE GAINESVILLE REGIONAL AIRPORT, GAINESVILLE, FLORIDA. THE PILOT AND ONE PASSENGER SUSTAINED MINOR INJURIES; THE AIRPLANE WAS SUBSTANTIALLY DAMAGED.

Recommendation Number : A-90-076
 Issue Date : June 04, 1990
 Addressee : FAA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE AIR TRAFFIC CONTROL HANDBOOK, 7110.65F, PARAGRAPH 3-1061, TO REQUIRE AIR TRAFFIC CONTROLLERS TO IMPOSE A 3-MINUTE DELAY ON THE PILOTS OF "SMALL" CATEGORY AIRPLANES WHO INTEND TO DEPART IN THE SAME DIRECTION FROM THE SAME RUNWAY BEHIND A "LARGE" CATEGORY AIRPLANE THAT IS ON TAKEOFF OR A LOW OR MISSED APPROACH, TO SEPARATE THE SMALL AIRPLANE FROM WAKE TURBULENCE.

Recommendation Number	:	A-90-077
Issue Date	:	June 04, 1990
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: AMEND THE AIRMAN'S INFORMATION MANUAL, PARAGRAPH 545, AND ADVISORY CIRCULAR 90-230 TO INFORM PILOTS OF "SMALL" CATEGORY AIRCRAFT THAT UNDER CERTAIN CIRCUMSTANCES INVOLVING TAKEOFF BEHIND "LARGE" CATEGORY AIRCRAFT, THEY CAN EXPECT THAT A 3-MINUTE DELAY WILL BE IMPOSED BY AIR TRAFFIC CONTROLLERS IN ORDER TO ALLOW FOR THE DISSIPATION OF THE WAKE TURBULENCE.

Log Number 2241
 Accident Synopsis:

ON OCTOBER 14, 1989, ABOUT 1411 MOUNTAIN DAYLIGHT TIME, A FIRE ERUPTED ON NS30DA, A BOEING 727-232 THAT HAD BEEN PARKED AT GATE C4 AT SALT LAKE CITY INTERNATIONAL AIRPORT (SLC), SALT LAKE CITY, UTAH. THE AIRPLANE HAD BEEN OPERATED UNDER TITLE 14 CODE OF FEDERAL REGULATIONS (CFR) PART 121 AS DELTA AIR LINES FLIGHT 1558, A SCHEDULED INTERNATIONAL REVENUE PASSENGER FLIGHT FROM LOS ANGELES, CALIFORNIA, TO EDMONTON, ALBERTA, CANADA, WITH A STOP AT SLG. THREE FLIGHT CREWMEMBERS, 4 FLIGHT ATTENDANTS AND 12 THROUGH PASSENGERS WHO HAD BOARDED AT LOS ANGELES WERE ON BOARD THE AIRPLANE WHEN THE FIRE ERUPTED. THE SECOND OFFICER WAS SEATED AT THE FLIGHT ENGINEER'S CONSOLE WHILE THE CAPTAIN AND FIRST OFFICER, WHO HAD JUST ENTERED THE AIR PLANE, WERE STANDING JUST FORWARD OF THE ENTRANCE TO THE COCKPIT. A DELTA AIR LINES MECHANIC WAS IN THE ELECTRICAL EQUIPMENT (EE) COMPARTMENT BELOW THE CABIN SERVICING THE PASSENGER OXYGEN SYSTEM.

Recommendation Number	:	A-90-097
Issue Date	:	June 25, 1990
Addressee	:	FAA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE AIRPORTS CERTIFICATED UNDER 14 CFR PART 139 TO PROVIDE QUICK-ACCESS COMMUNICATION LINKS TO AN EMERGENCY SERVICES FACILITY AT RAMP AREAS, GATE AREAS, AND JETWAYS.

Log Number 2252
 Accident Synopsis:

ON MAY 11, 1990 A BOEING 737-300, IRELAND REGISTRATION EI-BZB, LEASED TO AND OPERATED BY PHILIPPINE AIR LINES, EXPLODED AND BURNED AT MANILA, REPUBLIC OF THE PHILIPPINES, SHORTLY AFTER PUSHBACK FROM THE RAMP. AT THE TIME OF THE ACCIDENT, THE AIRPLANE WAS OPERATING ON POWER FROM THE AUXILIARY POWER UNIT. OF THE 119 PERSONS ON BOARD, 8 PERSONS FATALLY INJURED AND 30 RECEIVED SERIOUS INJURIES. THE AIRPLANE WAS DESTROYED BY FIRE.

Recommendation Number	: A-90-100
Issue Date	: August 01, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE TO REQUIRE IMMEDIATE INSPECTION OR TESTING OF FLOAT SWITCH WIRING FROM THE FLOAT SWITCHES TO THE REFUELING PANEL FOR CHAFFED OR DAMAGED INSULATION MATERIAL ON BOEING 737-300, -400, AND -500 SERIES AIRPLANES. THE DIRECTIVE SHOULD STATE THAT SPECIAL EMPHASIS BE PLACED ON INSPECTING THE WIRE BUNDLE WHERE IT PASSES THROUGH THE WING PYLON VAPOR SEALS AND UNDER THE WIRE BUNDLE CLAMPS.

Recommendation Number	: A-90-102
Issue Date	: August 01, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE APPLICABLE TO ALL 14 CFR PART 121 AIRPLANES TO REQUIRE, AT THE NEXT SCHEDULED MAJOR MAINTENANCE INSPECTION, AN INSPECTION OF THE WIRES IN WIRE BUNDLES IN THE WINGS WHERE ADDITIONAL WIRING HAS BEEN ADDED SINCE THE AIRPLANE WAS MANUFACTURED. THE INSPECTION SHOULD BE DIRECTED TO THE DETERMINATION OF INSULATION DAMAGE WHERE THE WIRE BUNDLE IS UNDER CLAMPS AND INSIDE VAPOR SEALS AND PRESSURE SEALS.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Log Number 2258

Accident Synopsis:

ON SEPTEMBER 8, 1989, N283AU, A BOEING 727-200 OPERATED AS USAIR FLIGHT 105 WAS A REGULARLY SCHEDULED REVENUE PASSENGER FLIGHT CONDUCTED UNDER 14 CODE OF FEDERAL REGULATIONS PART 121 FROM PITTSBURGH, PENNSYLVANIA (PIT), TO WICHITA, KANSAS, WITH AN EN ROUTE STOP IN KANSAS CITY, MISSOURI (MCI). FIFTY-EIGHT PASSENGERS, TWO FLIGHT CREWMEMBERS AND FOUR FLIGHT ATTENDANTS WERE ONBOARD. A FEDERAL AVIATION ADMINISTRATION INSPECTOR WHO WAS PERFORMING AN EN ROUTE INSPECTION OCCUPIED THE COCKPIT OBSERVER'S SEAT. THE FLIGHT FROM PITTSBURGH TO THE KANSAS CITY AREA WAS UNEVENTFUL. THE CAPTAIN WAS THE PILOT FLYING AND THE FIRST OFFICER WAS PERFORMING THE COMMUNICATIONS WITH AIR TRAFFIC CONTROL. USAIR 105 WAS CLEARED TO EXECUTE THE LOCALIZER BACK COURSE APPROACH TO RUNWAY 27 AT 2129:41. AT 2134:34, THE LOCAL CONTROLLER TOLD USAIR 105 "I CAN'T TELL FOR SURE BUT IT APPEARS WE HAVE LOST THE LIGHTING ON THE SOUTH SIDE OF THE AIRPORT." THE FLIGHTCREW LATER DESCRIBED SEEING A BRIGHT FLASH ABOUT THIS TIME. SUBSEQUENT INSPECTION REVEALED THAT THE AIRPLANE STRUCK AND SEVERED FOUR ELECTRONIC TRANSMISSION CABLES, LOCATED ABOUT 75 FEET ABOVE THE GROUND, APPROXIMATELY 7,000 FEET EAST OF THE RUNWAY 27 THRESHOLD. THE FLIGHTCREW EXECUTED A MISSED APPROACH AND LANDED UNEVENTFULLY IN SALINA, KANSAS.

Recommendation Number	: A-90-125
Issue Date	: September 28, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: MODIFY THE FUNCTIONAL STATEMENT OF THE FEDERAL AVIATION ADMINISTRATION OFFICE OF SAFETY QUALITY ASSURANCE AND PROVIDE SUFFICIENT RESOURCES TO IT TO MAKE IT CAPABLE OF PROVIDING EFFECTIVE QUALITY ASSURANCE AND SAFETY OVERSIGHT OF THE AIR TRAFFIC CONTROL SYSTEM.

Log Number 2262

Accident Synopsis:

ON OCTOBER 28, 1989, ABOUT 1837 HAWAIIAN STANDARD TIME, ALOHA ISLANDAIR, FLIGHT 1712, A DE HAVILLAND DHC-6-300, TWIN OTTER, N707PV, COLLIDED WITH MOUNTAINOUS TERRAIN WHILE EN ROUTE ON A SCHEDULED PASSENGER FLIGHT FROM THE KAHULUI AIRPORT, MAUI, HAWAII TO KAUNAKAKAI AIRPORT, MOLOKAI, HAWAII. THE FLIGHT WAS CONDUCTED UNDER VISUAL FLIGHT RULES (VFR) AND UNDER THE PROVISIONS OF 14 CFR PART 135.

Recommendation Number	: A-90-141
Issue Date	: November 21, 1990
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations to the FAA Classified as "Closed--Unacceptable"

-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE COMMERCIAL OPERATORS TO CONDUCT SUBSTANTIVE BACKGROUND CHECKS OF PILOT APPLICANTS, WHICH INCLUDE VERIFICATION OF PERSONAL FLIGHT RECORDS AND EXAMINATION OF TRAINING, PERFORMANCE, AND DISCIPLINARY AND OTHER RECORDS OF PREVIOUS EMPLOYERS, THE FEDERAL AVIATION ADMINISTRATION SAFETY AND ENFORCEMENT RECORDS, AND THE NATIONAL DRIVERS REGISTER.

Log Number 2266

Accident Synopsis:

ON NOVEMBER 30, 1990, AT 1925 EASTERN STANDARD TIME, A CESSNA 550 CITATION, N185SF, REGISTERED TO SOVRAN BANK NA, EXPERIENCED AN UNCONTAINED FAILURE OF THE PRATT & WHITNEY OF CANADA (P&WC) JT15D-48 RIGHT ENGINE WHILE ACCELERATING THROUGH 84 KNOTS, APPROACHING V1 SPEED DURING A TAKEOFF ROLL AT THE COLUMBUS METROPOLITAN AIRPORT, COLUMBUS, GEORGIA. THE FLIGHT WAS OPERATED UNDER INSTRUMENT FLIGHT RULES; HOWEVER, NIGHT VISUAL METEOROLOGICAL CONDITIONS PREVAILED AT THE TIME OF THE INCIDENT. THE AIRPLANE SUSTAINED MINOR DAMAGE. THE FIVE OCCUPANTS WERE NOT INJURED.

Recommendation Number	: A-91-013
Issue Date	: January 30, 1991
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: ISSUE AN AIRWORTHINESS DIRECTIVE TO REQUIRE THAT THE P/N 3106469-01 GAS GENERATOR CASE INSTALLED IN PRATT & WHITNEY OF CANADA JT15D-48 ENGINES BE INSPECTED WITHIN THE NEXT 10 FLIGHT HOURS AND AT APPROPRIATE INTERVALS THERE AFTER, FOR CRACKS IN THE AREA ADJACENT TO THE OUTER CASE SPOT WELDS; ANY CASE FOUND TO HAVE ANY CRACKS IN THIS AREA SHOULD BE REPLACED BEFORE FURTHER FLIGHT.

Log Number 2295

Accident Synopsis:

ON THURSDAY, JANUARY 25, 1990, AT APPROXIMATELY 2134 EASTERN STANDARD TIME, AVIANCA AIRLINES FLIGHT 052 (AV052), A BOEING 707-321B WITH COLOMBIAN REGISTRATION HK 2016, CRASHED IN A WOODED RESIDENTIAL AREA IN COVE NECK, LONG ISLAND, NEW YORK. AV052 WAS A SCHEDULED INTERNATIONAL PASSENGER FLIGHT FROM BOGOTA, COLOMBIA, TO JOHN F. KENNEDY INTERNATIONAL AIRPORT (JFK) NEW YORK, WITH AN INTERMEDIATE STOP AT JOSE MARIA CORDOVA AIRPORT, NEAR MEDELLIN, COLOMBIA. OF THE 158 PERSONS ABOARD, 73 WERE FATALY INJURED.

Recommendation Number	: A-91-035
Issue Date	: June 24, 1991
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS
 Safety Recommendations to the FAA Classified as "Closed--Unacceptable"
 -- AS OF 03/19/1993 --

Recommendation Subject

REQUIRE THAT TRANSPORT CATEGORY AIRPLANE FLIGHT MANUALS INCLUDE PROCEDURES SPECIFYING MINIMUM FUEL VALUES FOR VARIOUS PHASES OF AIRLINE FLIGHTS AT WHICH A LANDING SHOULD NOT BE DELAYED AND WHEN EMERGENCY HANDLING BY ATC SHOULD BE REQUESTED. THE MANUAL REQUIREMENT AND ASSOCIATED AMENDMENTS TO REGULATIONS AND PROCEDURES SHOULD INCLUDE CRITERIA FOR WHEN ATC MUST BE NOTIFIED THAT THE AIRPLANE MUST BE EN ROUTE TO ITS DESTINATION OR ALTERNATE AIRPORT VIA ROUTINE HANDLING, AND WHEN EMERGENCY HANDLING IS REQUIRED.

Log Number 2377

Accident Synopsis:

ON DECEMBER 11, 1991, AROUND 0820 EASTERN STANDARD TIME, N25BR, A BEECH AIRCRAFT CORPORATION BE 400 BEECHJET, OWNED AND OPERATED BY BRUNO'S INC., A CHAIN OF SUPERMARKETS AND RELATED STORES BASED IN BIRMINGHAM, ALABAMA LANDED AT THE RICHARD B. RUSSELL AIRPORT NEAR ROME, GEORGIA, AFTER AN UNEVENTFUL FLIGHT FROM BIRMINGHAM. THE AIRPLANE, OPERATING UNDER 14 CODE OF FEDERAL REGULATIONS (CFR) PART 91, GENERAL OPERATING AND FLIGHT RULES, WAS TRANSPORTING TWO FLIGHT CREWMEMBERS AND SEVEN PASSENGERS. THE PASSENGERS, EXECUTIVES OF BRUNO'S AND ANOTHER COMPANY, WERE ON AN ANNUAL CHRISTMAS TOUR OF BRUNO'S FACILITIES. AFTER THE ROME STOP, THE PASSENGERS WERE TO BE FLOWN TO HUNTSVILLE, ALABAMA, WHERE THEY WERE TO BE DRIVEN TO 11 BRUNO'S FACILITIES LOCATED BETWEEN HUNTSVILLE AND BIRMINGHAM. THE AIRPLANE LIFTED OFF AT 0937, AND THE CREW MADE INITIAL CONTACT WITH THE FEDERAL AVIATION ADMINISTRATION'S (FAA'S) ATLANTA AIR ROUTE TRAFFIC CONTROL CENTER. THE CREW WAS TOLD TO MAINTAIN VISUAL FLIGHT RULES CONDITIONS. AT 0940, THE AIRPLANE STRUCK MT. LAVENDER, ABOUT 6 MILES WEST OF ROME. THE AIRPLANE WAS DESTROYED AND ALL SEVEN PASSENGERS AND THE TWO PILOTS WERE KILLED IN THE ACCIDENT.

Recommendation Number	: A-92-055
Issue Date	: July 20, 1992
Addressee	: FAA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL AVIATION ADMINISTRATION: REQUIRE ALL TURBOJET-POWERED AIRPLANES THAT HAVE SIX OR MORE PASSENGER SEATS TO BE EQUIPPED WITH A GROUND PROXIMITY WARNING SYSTEM.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FHWA since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Log Number H-0502

Accident Synopsis:

ON JULY 14, 1986, A TRACTOR-SEMITRAILER COMBINATION BY RISING FAST TRUCKING COMPANY, INC. (RFT) WAS MAKING A U-TURN AT A HIGHWAY Crossover ON I-40 NEAR BRINKLEY, ARKANSAS. WHEN THE SEMITRAILER WAS STRUCK BY AN EASTBOUND INTERCITY BUS OPERATED BY TRAILWAYS LINES, INC. THE RFT TRUCKDRIVER AND HIS COORIVER WERE NOT INJURED. THE BUSDRIVER AND 27 PASSENGERS SUSTAINED INJURIES RANGING FROM MINOR TO SERIOUS. ONE PASSENGER WAS NOT INJURED.

Recommendation Number	:	H-87-045
Issue Date	:	August 19, 1987
Addressee	:	FHWA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL HIGHWAY ADMINISTRATION: REVISE THE FEDERAL MOTOR CARRIER SAFETY REGULATIONS WITHOUT DELAY TO REQUIRE OPERATORS OF COMMERCIAL MOTOR VEHICLES TO PERIODICALLY OBTAIN AND RETAIN ON FILE THE DRIVING VIOLATION CONVICTION RECORD FOR EACH DRIVER EMPLOYED FROM THE STATE WHICH ISSUED THE DRIVER'S LICENSE TO OPERATE A COMMERCIAL MOTOR VEHICLE.

Log Number H-0514

Accident Synopsis:

ABOUT 1:45 P.M. ON MAY 4, 1987, WHILE TRAVELING EASTBOUND ON INTERSTATE 10 (I-10) IN BEAUMONT, TEXAS, A TRACTOR-SEMI TRAILER OPERATED BY GRAEBEL VAN LINES, INC., JACKKNIFED IN THE CENTER LANE, VEERED LEFTWARD ACROSS THE LEFT LANE AND MEDIAN STRIP, AND STRUCK A TRAILWAYS BUS TRAVELING WESTBOUND ON I-10 IN THE LEFT LANE. A SMALL FIRE WHICH STARTED IN THE BUS BELOW THE DRIVER'S SEATING AREA WAS QUICKLY EXTINGUISHED BY A PASSERBY. THE BUSDRIVER AND 5 BUS PASSENGERS SUSTAINED FATAL INJURIES, 17 BUS PASSENGERS SUSTAINED SERIOUS TO MINOR INJURIES, AND 6 BUS PASSENGERS WERE NOT INJURED. THE TRUCK DRIVER AND HELPER SUSTAINED MODERATE AND MINOR INJURIES, RESPECTIVELY. IT WAS RAINING AT THE TIME OF THE ACCIDENT.

Recommendation Number	:	H-88-001
Issue Date	:	April 14, 1988
Addressee	:	FHWA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL HIGHWAY ADMINISTRATION: REVISE SECTIONS 393.75(B) AND (C) OF THE FEDERAL MOTOR CARRIER SAFETY REGULATIONS TO PROHIBIT THE USE OF TIRES WORN BELOW 4/32 INCH ON ANY AXLE OF A COMMERCIAL INTERSTATE VEHICLE.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FHWA since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Number	:	H-88-002
Issue Date	:	April 14, 1988
Addressee	:	FHWA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL HIGHWAY ADMINISTRATION: ISSUE AN ON-GUARD BULLETIN TO ADVISE OWNERS, OPERATORS, MAINTENANCE PERSONNEL, AND STATE COMMERCIAL VEHICLE INSPECTORS OF THE PROBLEMS ASSOCIATED WITH OPERATING VEHICLES EQUIPPED WITH TIRES WORN BELOW 4/32-INCH TREAD GROOVE DEPTHS.

Log Number R-0567A
Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD HAS HAD A LONG STANDING OBJECTIVE TO IMPROVE SAFETY AT RAILROAD/HIGHWAY GRADE CROSSINGS. IN CALENDAR YEAR 1985, THE SAFETY BOARD INVESTIGATED 75 ACCIDENTS INVOLVING PASSENGER/COMMUTER TRAINS TO DETERMINE SAFETY ISSUES THAT COULD BE SUCCESSFULLY ADDRESSED BY FEDERAL AGENCIES, STATES, AND OTHER ORGANIZATIONS RESPONSIBLE FOR THE PUBLIC'S SAFETY. AS A RESULT OF A SAFETY STUDY BASED ON THESE 75 ACCIDENTS, THE SAFETY BOARD REMAINS CONCERNED THAT THE PUBLIC (MOTOR VEHICLE OCCUPANTS AND PASSENGERS ON TRAINS) AND RAILROAD EMPLOYEES ARE PLACED IN LIFE-THREATENING SITUATIONS DAILY AT GRADE CROSSING LOCATIONS, WHERE THE SAFETY BOARD BELIEVES SAFETY IMPROVEMENTS CAN BE ACCOMPLISHED.

Recommendation Number	:	R-86-050
Issue Date	:	January 13, 1987
Addressee	:	FHWA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL HIGHWAY ADMINISTRATION: DEVELOP AND REQUIRE THE USE OF ADVANCE WARNING SIGNS THAT CLEARLY INFORM MOTOR VEHICLE DRIVERS OF PARTICULAR DANGERS AT GRADE CROSSINGS, INCLUDING THE WARNING OF LIMITED SIGHT DISTANCE AND HIGH HUMP PROFILE SURFACE.

Recommendation Number	:	R-86-057
Issue Date	:	January 13, 1987
Addressee	:	FHWA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FHWA since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL HIGHWAY ADMINISTRATION: IN CONJUNCTION WITH THE FEDERAL RAILROAD ADMINISTRATION, STUDY, REPORT, AND UNDERTAKE FURTHER DEMONSTRATIONS ON THE FEASIBILITY OF ADOPTING HIGHWAY TRAFFIC SIGNALS AS PRIMARY WARNING DEVICES AT GRADE CROSSINGS.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations issued to NHTSA since 1987 classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Log Number H-0516

Accident Synopsis:

THAT LAP/SHOULDER BELTS ARE OF VALUE TO REDUCE DEATH AND INJURY IS UNDISPUTED, BUT JUST HOW VALUABLE THEY ARE IS A MATTER OF DEBATE. MANUAL SEATBELT SYSTEMS IN MOTOR VEHICLES (UNLIKE PASSIVE RESTRAINTS, SUCH AS AIR BAGS AND AUTOMATIC SEATBELTS) HAVE NEVER BEEN REQUIRED TO BE TESTED FOR CRASH PROTECTION PERFORMANCE; COMPLETE AND ACCURATE DATA ON THEIR PERFORMANCE IN REAL-WORLD CRASHES HAVE BEEN EXTREMELY LIMITED, AND BASIC CHANGES IN VEHICLE DESIGN OVER THE YEARS COULD HAVE AFFECTED BELT PERFORMANCE. IN ADDITION, SEAT BELT PERFORMANCE IS A TIMELY TOPIC SINCE STATES ARE ENACTING MANDATORY SEATBELT-USE LAWS REQUIRING FRONT SEAT OCCUPANTS (AND REAR SEAT OCCUPANTS, IN SOME CASES) TO WEAR THEIR SEAT BELTS.

Recommendation Number	: H-88-009
Issue Date	: May 10, 1988
Addressee	: NHTSA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: LIMIT THE ANGLE OF INCLINATION ALLOWABLE IN RECLINING SEATS IN PASSENGER VEHICLES TO NO GREATER THAN THE MAXIMUM ANGLE THAT CAN SAFELY BE USED WITH A LAP/SHOULDER BELT.

Log Number H-0545

Accident Synopsis:

IN 1977, A SERIES OF NEW AND MODIFIED FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS) FOR SCHOOL BUSES BECAME EFFECTIVE, MANDATING DIFFERENT PERFORMANCE STANDARDS FOR SCHOOL BUSES COMPARED TO OTHER BUSES. DATA ON THE CRASH PERFORMANCE OF SCHOOL BUSES BUILT TO THESE STANDARDS WERE LACKING, SO THE NATIONAL TRANSPORTATION SAFETY BOARD CONDUCTED A SERIES OF IN-DEPTH ACCIDENT INVESTIGATIONS FROM 1984 TO 1988 TO DETERMINE HOW WELL FEDERAL SCHOOL BUS STANDARDS ARE WORKING TO PROTECT PASSENGERS FROM INJURY AND WHETHER CHANGES IN THE STANDARDS ARE NEEDED. TWO REPORTS WERE PLANNED BECAUSE FEDERAL STANDARDS AND GUIDELINES DIFFERENTIATE BETWEEN SCHOOL BUSES BY SIZE. THE FIRST REPORT, PUBLISHED IN 1987, EXAMINED THE CRASH PERFORMANCE OF TYPE C AND TYPE D SCHOOL BUSES (THE TYPES COMMONLY CALLED LARGE OR TYPE I SCHOOL BUSES) BUILT AFTER THE NEW STANDARDS FOR SCHOOL BUSES BECAME EFFECTIVE. THE SECOND REPORT ON SCHOOL BUS SAFETY IS NOW COMPLETED; IT FOCUSES ON THE PERFORMANCE OF POSTSTANDARD TYPE A AND TYPE B SCHOOL BUSES (THE TYPES REFERRED TO IN SOME STATISTICS AS SMALL OR TYPE II SCHOOL BUSES). THE SAFETY ISSUES RELEVANT TO SMALL SCHOOL BUSES, AND THE BASIS FOR THE SUBSEQUENT RECOMMENDATIONS ISSUED BY THE SAFETY BOARD, ARE DISCUSSED IN DETAIL IN THE PUBLICATION ABOUT THE STUDY.

Recommendation Number	: H-89-048
Issue Date	: March 19, 1990
Addressee	: NHTSA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations issued to NHTSA since 1987 classified as Closed--Unacceptable Action

-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION: AMEND FEDERAL MOTOR VEHICLE SAFETY STANDARD 217, "BUS WINDOW RETENTION AND RELEASE," TO INCLUDE A PERFORMANCE STANDARD FOR THE MINIMUM RETENTION OF WIND SHIELDS IN ALL SIZES OF SCHOOL BUSES.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Log Number M-D325
Accident Synopsis:

ON MAY 14, 1986, THE U.S. SAILING VESSEL PRIDE OF BALTIMORE CAPSIZED AND SANK IN THE ATLANTIC OCEAN, ABOUT 250 NM NORTH OF PUERTO RICO WHILE EN ROUTE FROM ST. JOHN, U.S. VIRGIN ISLANDS, TO THE CHESAPEAKE BAY, MARYLAND. THE VESSEL, A REPLICA OF A BALTIMORE CLIPPER, WAS RETURNING TO BALTIMORE, MARYLAND, AFTER AN EXTENDED EUROPEAN GOOD WILL TOUR PROMOTING THE PORT OF BALTIMORE. THE PRIDE OF BALTIMORE LEFT ST. JOHN ABOUT 1100 ON MAY 11, 1986, AND AFTER CLEARING THE HARBOR, SET SAILS AND PROCEEDED OUT TO SEA. AFTER EXPERIENCING SOME CALM PERIODS DURING THE FIRST NIGHT, THE WIND FILLED IN DURING THE NIGHTS OF MAY 12 AND 13 AND BY THE MORNING OF MAY 14, THE WIND HAD INCREASED TO ABOUT 25 TO 28 KNOTS. THE SAILS WERE SHORTENED ACCORDINGLY AND ALL HANDS, EXCEPT FOR THE COOK, WERE ON DECK COILING LINES, CLEARING AWAY GEAR, AND SECURING ALL BUT TWO OF THE SAILS. SHORTLY AFTER NOON, A SUDDEN GUST OF WIND STRUCK THE PRIDE OF BALTIMORE HEELING IT TO PORT UNTIL IT WAS ON ITS BEAM END WITH THE MASTS AND SAILS LYING ON THE WATER. CREWMEMBERS WERE THROWN INTO THE WATER AND THE COOK MANAGED TO ESCAPE FROM BELOW. TWO INFLATABLE LIFERAFTS DEPLOYED BUT DID NOT REMAIN INFLATED. ONE RAFT WAS DAMAGED BY THE SHIP'S RIGGING WHILE THE SECOND RAFT DEFLATED THROUGH THE OPEN TOPPING-OFF VALVES. THE PRIDE OF BALTIMORE, VALUED AT \$1,000,000, FLOODED AND SANK IN A MATTER OF MINUTES. AFTER ABOUT 6 HOURS, THE EIGHT SURVIVING CREWMEMBERS MANAGED TO INFLATE ONE OF THE SIX-MAN LIFERAFTS BY MOUTH. AFTER DRIFTING FOR OVER 4 DAYS, THE SURVIVORS WERE RESCUED ON MAY 19, 1986, BY THE CREW OF THE M/V TORO, A NORWEGIAN TANKER, WHO NOTIFIED THE COAST GUARD OF THE ACCIDENT.

Recommendation Number	: M-87-004
Issue Date	: February 18, 1987
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE UNITED STATES COAST GUARD: REQUIRE STOWAGE OF LIFE PRESERVERS CLOSE TO OR AT EMERGENCY STATIONS, IF DESIGNATED, OR CLOSE TO THE EXTERIOR OF EACH UNINSPECTED VESSEL TO FACILITATE IMMEDIATE ACCESS IN THE EVENT OF A SUDDEN, CATASTROPHIC EVENT.

Log Number M-D328
Accident Synopsis:

ABOUT 0910 ON JULY 30, 1986, THE EMERALD SEAS, A PANAMANIAN REGISTERED, 622 FOOT, 24,458-GROSS TON, PASSENGER SHIP WITH 1,296 PEOPLE ABOARD, WAS ANCHORING LESS THAN A MILE OFFSHORE OF LITTLE STIRRUP CAY, BAHAMAS. WHEN A CREWMEMBER SAW THICK, BLACK SMOKE COMING OUT OF AN ENGINE DEPARTMENT STOREROOM, THE STOREROOM CONTAINED ACETYLENE, OXYGEN, ARGON CYLINDERS, AND PLUMBING PARTS. WHEN THE STOREROOM DOOR WAS OPENED, MORE SMOKE POURED OUT, SO CREWMEMBERS RETREATED BEHIND A WATERTIGHT DOOR. SHORTLY THEREAFTER, THERE WERE TWO EXPLOSIONS AND A FIRE. WHILE PASSENGERS WERE ASSEMBLED AT THEIR ASSIGNED LIFEBOATS, THE CREW FOUGHT THE FIRE. BY 1005, THE FIRE HAD BEEN EXTINGUISHED. U.S. COAST GUARD HELICOPTERS EVACUATED 15 PASSENGERS AND 2 CREWMEMBERS, WHO WERE TAKEN TO HOSPITALS IN MIAMI AND TREATED FOR SMOKE INHALATION AND INJURIES. THE SHIP ARRIVED IN MIAMI WITH THE REMAINING PASSENGERS AND CREWMEMBERS ON JULY 31. DAMAGE REPAIR COSTS WERE ESTIMATED TO BE ABOUT \$300,000. THE SHIP WAS RETURNED TO SERVICE ON AUGUST 1, 1986.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Number : M-87-018
Issue Date : June 18, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: PROPOSE THAT THE INTERNATIONAL MARITIME ORGANIZATION AMEND SOLAS 74 TO REQUIRE THAT SMOKE DETECTORS BE MADE PART OF EACH LOCAL VENTILATION SYSTEM TO SHUT DOWN THE VENTILATION SYSTEM AUTOMATICALLY WHEN THE DETECTOR IS ACTIVATED TO PREVENT THE SPREAD OF SMOKE.

Log Number M-D329
Accident Synopsis:

ABOUT 1030 ON OCTOBER 28, 1986, EXPLOSIONS AND FIRES IN THE ENGINEROOM AND STARBOARD FUEL OIL TANKS OF THE 811-FOOT-LONG U.S. TANKSHIP OMI YUKON WHICH WAS EN ROUTE FROM HAWAII TO SOUTH KOREA FOR SCHEDULED VESSEL REPAIRS AND BIENNIAL INSPECTION BY THE U.S. COAST GUARD. AT THE TIME OF THE EXPLOSIONS, THE TANKSHIP WAS LOCATED IN THE PACIFIC OCEAN ABOUT, 1,000 MILES WEST OF HONOLULU, HAWAII, AND WAS NOT CARRYING ANY CARGO. THERE WERE 24 CREWMEMBERS, 2 U.S. WELDERS, AND 11 JAPANESE WORKERS EMPLOYED IN CLEANING THE CARGO TANKS ABOARD THE VESSEL. FOUR PERSONS WERE KILLED; THE OTHER 33 PERSONS SAFELY ABANDONED THE VESSEL AND WERE LATER RESCUED BY A JAPANESE FISHING VESSEL. THE ESTIMATED DAMAGE TO THE OMI YUKON WAS \$40 MILLION. THE VESSEL WAS TOWED TO JAPAN AND SOLD FOR SCRAP.

Recommendation Number : M-87-028
Issue Date : August 24, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDED THAT THE U.S. COAST GUARD: REQUIRE THAT THE FUEL OIL LOADED ABOARD A VESSEL BE SAMPLED AT THE BEGINNING AND NEAR THE END OF EACH LOAD, THAT EACH SAMPLE BE TESTED FOR FLASH POINT AND VISCOSITY, AND THAT THE RESULTS OF THE TESTS BE PROVIDED TO THE CHIEF ENGINEER BEFORE THE FUEL OIL IS USED.

Recommendation Number : M-87-029
Issue Date : August 24, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDED THAT THE U.S. COAST GUARD: REQUIRE THAT THE FUEL OIL TANK VENTS ON ALL U.S. VESSELS BE APPROPRIATELY LABELED.

Recommendation Number : M-87-031
Issue Date : August 24, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDED THAT THE U.S. COAST GUARD: REQUIRE THAT LIFE PRESERVERS AND EXPOSURE SUITS BE STOWED OUTSIDE OF PASSENGER AND CREW BERTHING ROOMS AND CLOSER TO OR AT EMERGENCY STATIONS.

Recommendation Number : M-87-034
Issue Date : August 24, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDED THAT THE U.S. COAST GUARD: REQUIRE THE INSPECTION AND REPLACEMENT AS NECESSARY OF NONMETALLIC IMPELLERS IN LIFEBOAT COOLING WATER PUMPS AT MIDPERIOD AND BIENNIAL INSPECTIONS.

Recommendation Number : M-87-037
Issue Date : August 24, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDED THAT THE U.S. COAST GUARD: ESTABLISH A LOCAL USER TERMINAL FOR THE INTERNATIONAL SEARCH AND RESCUE SARSAT SATELLITE SYSTEM IN THE CENTRAL PACIFIC OCEAN.

Log Number M-0330
 Accident Synopsis:

COMMERCIAL FISHERMEN ARE INVOLVED IN ONE OF THE HIGHEST RISK INDUSTRIES IN THE WORLD. THE FISHING INDUSTRY IN THE UNITED STATES HAS THE POOREST SAFETY RECORD OF ALL U.S. INDUSTRIES.

Recommendation Number	: M-87-065
Issue Date	: September 22, 1987
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: INCLUDE IN THE FINAL RULE ON "OPERATION OF A VESSEL WHILE INTOXICATED" AN ABSOLUTE PROHIBITION AGAINST THE USE OF ALCOHOL AND/OR DRUGS WHILE ENGAGED IN COMMERCIAL FISHING OPERATIONS.

Log Number M-0331
 Accident Synopsis:

ON THE MORNING OF OCTOBER 7, 1986, THE PANAMANIAN TANK SHIP SHOUN VANGUARD WAS DISCHARGING A CARGO OF ACETONE AT THE INTERCONTINENTAL TERMINALS COMPANY (ITC) IN DEER PARK, TEXAS. AT THE SAME TIME, THE U.S. TANK BARGES HOLLYWOOD 3013 AND HOLLYWOOD 3003 WERE DISCHARGING A CARGO OF METHYL TERTIARY BUTYL ETHER, A GASOLINE ADDITIVE, ON THE OTHER SIDE OF THE SAME DOCK STRUCTURE. ABOUT 0350, PERSONS ON THE DOCK, SOME CREWMEMBERS ON THE MAIN DECK OF THE SHOUN VANGUARD, AND THE TANKERMAN ON THE DECK OF THE HOLLYWOOD 3003 NOTICED A WHITE VAPOR CLOUD THAT ENVELOPED THE DOCK AND THEN SPREAD TO THE SHIP AND TO THE HOLLYWOOD 3013. MOMENTS LATER, THE CLOUD IGNITED AND THE DOCK, THE SHIP, AND THE HOLLYWOOD 3013 WERE ENGULFED IN FLAMES. WITHIN MINUTES, TERMINAL EMPLOYEES ARRIVED ON SCENE WITH FIREFIGHTING GEAR AND BEGAN FIGHTING THE FIRE ON THE DOCK. MEANWHILE, THE SHIP'S CREW HAD BEGUN FIGHTING THE FIRE ON THE DECK OF THE SHIP. SOON AFTER, THE FIRES ON THE DOCK AND THE SHIP WERE EXTINGUISHED, BUT THE FIRE ON THE HOLLYWOOD 3013 CONTINUE TO BURN. THE HOLLYWOOD 3003 REMOVED FROM THE SCENE OF THE FIRE AND RECEIVED ONLY SUPERFICIAL DAMAGE IN THE ACCIDENT. EFFORTS BY SHORESIDE FIREFIGHTERS TO EXTINGUISH THE FIRE ON THE HOLLYWOOD 3013 WERE NOT SUCCESSFUL, AND THE FIRE CONTINUED TO BURN FOR 5 DAYS UNTIL IT BURNED ITSELF OUT AT 2343 ON OCTOBER 11, 1986.

Recommendation Number	: M-87-071
Issue Date	: October 13, 1987
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE OPERATORS OF U.S. WATERFRONT FACILITIES THAT HANDLE HIGHLY FLAMMABLE PRODUCTS TO PROVIDE THE PERSON IN CHARGE OF OIL OR HAZARDOUS MATERIALS TRANSFER OPERATIONS WITH A MEANS OF PROTECTION OR ESCAPE FROM FIRE.

Recommendation Number : M-87-072
Issue Date : October 13, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE ALL TANK SHIPS THAT INTEND TO TRANSFER HIGHLY FLAMMABLE PRODUCTS AT U.S. WATERFRONT FACILITIES TO DEVELOP EMERGENCY CONTINGENCY PLANS WHICH SET FORTH THE PROCEDURES TO BE FOLLOWED BY THE CREW IN THE EVENT OF FIRE OR EXPLOSION AND WHICH DESCRIBE PRIMARY AND SECONDARY AVENUES OF ESCAPE FROM THE VESSEL AND THE CONDITIONS UNDER WHICH VESSEL ABANDONMENT ACTION SHOULD BE TAKEN WHILE THE VESSEL IS MOORED AT SUCH A FACILITY.

Recommendation Number : M-87-073
Issue Date : October 13, 1987
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE U.S. WATERFRONT FACILITIES THAT LOAD OR DISCHARGE HIGHLY FLAMMABLE CARGOES ON BARGES TO PROVIDE THE TANKERMAN ON BOARD SUCH BARGES WITH SOME MEANS OF ESCAPE FROM THE BARGES TO A SAFE LOCATION ON SHORE IN EVENT OF FIRE OR EXPLOSION WHILE SUCH BARGES ARE MOORED AT SUCH FACILITIES.

Log Number M-0338

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Accident Synopsis:

ABOUT 0112 ON MAY 3, 1987, THE 607-FOOT-LONG POLISH BULK CARRIER ZIEMIA BIALOSTOCKA RAMMED THE SIDNEY LANIER HIGHWAY BRIDGE IN BRUNSWICK, GEORGIA. AT THE TIME OF THE ACCIDENT, THE OUTBOUND VESSEL WAS UNDER THE CONTROL OF A GEORGIA STATE PILOT; THE MASTER WAS IN THE WHEELHOUSE. THERE WERE NO INJURIES OR DEATHS. AS A RESULT OF THE ACCIDENT, THE ZIEMIA BIALOSTOCKA SUSTAINED MINOR DAMAGE. DAMAGE TO THE SIDNEY LANIER BRIDGE HAS BEEN ESTIMATED AT \$1.4 MILLION. THE HIGHWAY BRIDGE DID NOT REOPEN FOR VEHICULAR TRAFFIC UNTIL SEPTEMBER 6, 1987, AT AN ESTIMATED COST TO THE PUBLIC OF \$7.9 MILLION.

Recommendation Number : M-88-020
 Issue Date : April 26, 1988
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: AMEND 33 CFR 164.11(K) TO REQUIRE THAT MASTERS AND PILOTS DISCUSS AND AGREE BEFOREHAND TO THE ESSENTIAL FEATURES AND RELEVANT CHECKPOINTS OF MANEUVERS EXPECTED TO BE UNDERTAKEN.

Recommendation Number : M-88-021
 Issue Date : April 26, 1988
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: ESTABLISH MANEUVERING PERFORMANCE STANDARDS AND REQUIRE THAT VESSEL RELATIVE MANEUVERING PERFORMANCE INFORMATION BE POSTED ON THE NAVIGATION BRIDGE OF ALL U.S. VESSELS AND FOREIGN VESSELS OVER 1,600 GROSS TONS ENTERING U.S. WATERS WITHOUT WAITING FOR ACTION BY THE INTERNATIONAL MARITIME ORGANIZATION.

Recommendation Number : M-88-023
 Issue Date : April 26, 1988
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REVIEW THE NAVIGATIONAL CHANNEL CONFIGURATIONS IN U.S. HARBORS AND REQUIRE, WHERE POSSIBLE, THAT LARGE VESSELS BE ALIGNED WITH ANY CHANNEL BRIDGE OPENING BEFORE THE VESSELS REACH A POINT EQUAL TO THEIR STOPPING DISTANCE FROM THE BRIDGE.

Log Number M-0342

Accident Synopsis:

ON OCTOBER 9, 1987, THE U.S. FISHING VESSEL LARK WITH A TWO MAN CREW ABOARD, DEPARTED NANTUCKET HARBOR, MASSACHUSETTS, TO FISH IN NANTUCKET SOUND. ABOUT 1940, THE 46-FOOT-LONG STERN TRAWLER GROUNDNED NEAR GREAT POINT, ON THE NORTHEASTERN PART OF NANTUCKET ISLAND. THE MASTER OF THE LARK RADIOED THE U.S. COAST GUARD SEARCH AND RESCUE STATION AT BRANT POINT, NANTUCKET ISLAND, FOR ASSISTANCE, AND A COAST GUARD UTILITY BOAT (UTB), CG-41362, ARRIVED ON THE SCENE AT 2009. THE COXSWAIN OF THE UTB EVALUATED THE SITUATION AND DECIDED TO REFLOAT THE GROUNDNED VESSEL. A TOWLINE WAS PASSED FROM THE UTB TO THE LARK, AND THE UTB APPLIED FULL POWER TO PULL THE LARK OFF ITS STRAND. AFTER PULLING ON THE TOWLINE FOR ABOUT 5 MINUTES, THE LARK BECAME FREE OF ITS STRAND AND THEN SUDDENLY CAPSIZED TO PORT AND SANK. ONE CREWMAN FROM THE LARK WAS RESCUED BY THE CREW OF THE UTB. THE SECOND CREWMAN, HOWEVER, REMAINS MISSING AND IS PRESUMED TO BE DEAD.

Recommendation Number	:	M-88-043
Issue Date	:	July 25, 1988
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REVIEW AND REVISE, AS NECESSARY, COAST GUARD POLICIES RELATED TO RENDERING ASSISTANCE TO GROUNDNED VESSELS.

Log Number M-0343

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Accident Synopsis:

AT 0201 LOCAL TIME ON SEPTEMBER 19, 1987, THE CAPTAIN OF THE 127-FOOT-LONG U.S. FISHING VESSEL NORDFJORD BROADCASTED A DISTRESS MESSAGE VIA SINGLE-SIDE-BAND RADIO WHICH WAS RECEIVED BY U.S. COAST GUARD RADIO STATION, KODIAK, ALASKA (COMMSTA KODIAK). HOWEVER, THE DISTRESS MESSAGE DID NOT STATE THE POSITION OF THE VESSEL OR OTHER DETAILS CONCERNING THE DISTRESS. ABOUT 0430, THE COAST GUARD LEARNED FROM THE OWNER THAT THE NORDFJORD WAS ON A VOYAGE FROM SEATTLE, WASHINGTON, TO UNIMAK PASS, ALASKA, AND WAS SOMEWHERE IN THE MIDDLE OF THE GULF OF ALASKA AT THE TIME OF THE DISTRESS MESSAGE. DESPITE AN 8-DAY SEARCH COVERING OVER 176,000 SQUARE MILES BY COAST GUARD AND CANADIAN COAST GUARD AIRCRAFT, NEITHER THE VESSEL NOR ANY DEBRIS THAT COULD BE IDENTIFIED AS COMING FROM THE NORDFJORD WAS FOUND. NEITHER THE CAPTAIN NOR ANY OF THE FOUR CREWMEMBERS WERE EVER SEEN OR HEARD FROM AGAIN.

Recommendation Number	:	M-88-04B
Issue Date	:	July 25, 1988
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: AMEND COAST GUARD SEARCH AND RESCUE PROCEDURES, TO REQUIRE THAT A SECOND CREW AND AIRCRAFT BE PLACED IN THE "READY" STATUS WHENEVER THE PRIMARY "READY" AIRCRAFT WOULD NOT BE AVAILABLE FOR OTHER SEARCH AND RESCUE MISSIONS SUCH AS IF THE PRIMARY "READY" AIRCRAFT WAS ON AN EXTENDED FLIGHT OR WHEN CONCURRENT SEARCH AND RESCUE MISSIONS CAN BE ANTICIPATED.

Log Number M-0347

Accident Synopsis:

ON FEBRUARY 15, 1988, THE 811-FOOT-LONG TANKER M/V MAERSK NEPTUNE RAMMED THE 601-FOOT-LONG BULK CARRIER M/V MONT FORT LYING AT ANCHOR IN UPPER NEW YORK BAY. THE MONT FORT WAS ANCHORED IN FEDERAL ANCHORAGE 23B LOCATED NORTH OF THE VERRAZANO-NARROWS BRIDGE NEAR STATEN ISLAND. THE MONT FORT HAD ANCHORED ONLY RECENTLY, HAVING ARRIVED EARLIER THAT SAME DAY. THE MAERSK NEPTUNE WAS INBOUND FROM SEA TO THE ANCHORAGE UNDER THE DIRECTION OF A NEW JERSEY/SANDY HOOK PILOT. THE VISIBILITY WAS GENERALLY LESS THAN 1/4 MILE AND AT TIMES IT WAS ABOUT 300 YARDS. THE PILOT OF THE MAERSK NEPTUNE GRADUALLY REDUCED THE VESSEL'S SPEED AS THE SHIP APPROACHED THE BRIDGE AND CONTINUED TO REDUCE SPEED AS HE ENTERED THE ANCHORAGE. WHEN THE PILOT SAW THE MONT FORT, THE DIRECT-DRIVE DIESEL ENGINE WAS STOPPED, PLACED ON FULL ASTERN, AND EMERGENCY FULL ASTERN. BEFORE ALL HEADWAY WAS REMOVED, THE TANKER COLLIDED WITH THE MONT FORT.

Recommendation Number	:	M-88-061
Issue Date	:	December 02, 1988
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE, UNDER THE AUTHORITY OF THE CAPTAIN-OF-THE-PORT, THAT MASTERS, PILOTS, OR PERSONS-IN-CHARGE OF VESSELS BOUND FOR ANCHORAGES IN NEW YORK HARBOR DETERMINE THE CURRENT STATUS OF AN ANCHORAGE BEFORE ENTERING.

Recommendation Number	: M-88-062
Issue Date	: December 02, 1988
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: BROADCAST AUTOMATICALLY ANCHORAGE, VISIBILITY, AND OTHER RELEVANT INFORMATION FOR NEW YORK HARBOR AT REGULAR INTERVALS OVER AN APPROPRIATE MARINE RADIO FREQUENCY.

Log Number M-0352

Accident Synopsis:

ABOUT 2215 ON AUGUST 31, 1988, AN EXPLOSION IN CARGO TANK 1 OF THE 711-FOOT-LONG MALTESE TANK VESSEL FIONA KILLED ONE PERSON AND BLEW OFF THE TOP OF THE CARGO TANK. THE VESSEL, WHICH WAS MOORED ABOUT 2 MILES OFFSHORE NEAR THE LONG ISLAND LIGHTING COMPANY (LILCO) POWER PLANT AT NORTHPORT, NEW YORK, WAS PREPARING TO DISCHARGE ABOUT 41,000 LONG TONS OF NO. 6 FUEL OIL, A GRADE E CARGO, INTO THE LILCO SUBSEA PIPELINE. DAMAGE COST WERE ESTIMATED TO BE \$500,000.

Recommendation Number	: M-89-018
Issue Date	: July 07, 1989
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE THE MASTERS OF ALL VESSELS OVER 1,600 GROSS TONS TO REPORT THEIR LLOYD'S REGISTER OF SHIPPING NUMBER OF INTERNATIONAL MARITIME ORGANIZATION INTERNATIONAL NUMBER BEFORE ARRIVING IN U.S. WATERS AND TO PROVIDE WRITTEN DOCUMENTATION OF THE VESSEL'S LLOYD'S REGISTER OF SHIPPING NUMBER OF INTERNATIONAL MARITIME ORGANIZATION INTERNATIONAL NUMBER ON ARRIVAL AT A U.S. PORT.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Recommendation Number : M-89-019
 Issue Date : July 07, 1989
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE THE CAPTAIN OF THE PORT (COTP), NEW HAVEN TO PROVIDE SPECIFIC WRITTEN GUIDANCE TO ALL COTP WATCHSTANDERS REGARDING THE IDENTIFICATION OF ALL VESSELS ENTERING THE U.S. WATERS THAT MAY POSE A SAFETY OR POLLUTION HAZARD.

Log Number M-0353A
 Accident Synopsis:

AT 1945, ON SEPTEMBER 2, 1988, THE BAHAMIAN TANKSHIP ESSO PUERTO RICO DEPARTED THE EXXON FACILITY IN BATON ROUGE, LOUISIANA, WITH A CARGO OF CARBON BLACK FEEDSTOCK OIL BOUND FOR ROTTERDAM, NETHERLANDS. THE VESSEL'S DOWNRIVER TRANSIT WAS WITHOUT INCIDENT UNTIL THE VESSEL APPROACHED KENNER BEND AND THE PILOT SIGHTED THE PHILIPPINE BULK CARRIER LONGEVITY AHEAD WHICH WAS AT ANCHOR AND LYING CROSSWISE IN THE RIVER. THE DEEP WATER CHANNEL WAS TO THE STERN OF THE ANCHORED LONGEVITY, BUT THE PILOT DID NOT BELIEVE THAT THERE WAS SUFFICIENT ROOM ASTERN OF THE LONGEVITY FOR THE ESSO PUERTO RICO TO PASS SAFELY. THEREFORE, HE PILOTED THE ESSO PUERTO RICO PAST THE BOW OF THE LONGEVITY. IN SO DOING, THE VESSEL LEFT THE CONFINES OF THE DEEP WATER CHANNEL, ENTERED AN AREA OF SHALLOW WATER, AND RETURNED TO THE DEEP WATER CHANNEL DOWNSTREAM FROM THE LONGEVITY. SHORTLY THEREAFTER, THE ESSO PUERTO RICO DEVELOPED A PORT LIST WHICH CONTINUED TO WORSEN UNTIL IT REACHED 8 DEGREES. THE MASTER ORDERED THE CARGO TANKS SOUNDED, AND IT WAS DISCOVERED THAT APPROXIMATELY 6 METERS OF CARGO HAD BEEN LOST FROM THE NO. 1 STARBOARD CARGO TANK. THE ESSO PUERTO RICO THEN PROCEEDED TO ANCHORAGE. A DIVER EXAMINED THE HULL AND FOUND A 32-FOOT-LONG GASH IN THE BOTTOM OF THE NO. 1 STARBOARD CARGO TANK. THE 4.003.6 METRIC TONS OF CARBON BLACK OIL THAT HAD BEEN CONTAINED IN THE NO. 1 STARBOARD CARGO TANK LEAKED INTO THE MISSISSIPPI RIVER.

Recommendation Number : M-89-041
 Issue Date : August 08, 1989
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: AMEND TITLE 33 CODE OF FEDERAL REGULATIONS 164 TO REQUIRE PILOTS TO INFORM SHIP MASTERS OF ABNORMAL CHARACTERISTICS OF THE AREA TO BE TRANSITED THAT MAY AFFECT THE VESSEL'S SAFE NAVIGATION AND OF NONROUTINE MANEUVERS BEFORE THE PILOT MAKES THEM.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Log Number M-0355
 Accident Synopsis:

ON MAY 6, 1988, THE 500-FOOT-LONG CYPRIAN BULK CARRIER PONTOKRATIS WAS PROCEEDING OUTBOUND IN THE CALUMET RIVER UNDER THE CONTROL OF A CANADIAN PILOT WITH THE ASSISTANCE OF TWO HARBOR TUGS. WHILE TRANSITING THE CSXT BRIDGE DRAW, THE NAVIGATION BRIDGE OF THE PONTOKRATIS STRUCK THE CSXT RAIL ROAD BASCULE BRIDGE LEAF, AND THE BRIDGE LEAF COLLAPSED ATOP THE VESSEL'S WHEELHOUSE, ABOUT 2009. THE PILOT, THE MASTER, AND CREWMEMBERS EXITED THE WHEELHOUSE AND RAN ONTO THE STERN OF THE VESSEL. NO ONE WAS INJURED AS A RESULT OF THE ACCIDENT. THE CSXT BRIDGE WAS A TOTAL LOSS, ESTIMATED BETWEEN \$10 AND \$12 MILLION. THE NAVIGATION BRIDGE OF THE PONTOKRATIS WAS CRUSHED, AND THE DAMAGE TO THE VESSEL WAS ESTIMATED TO BE ABOUT \$2.5 MILLION.

Recommendation Number	:	M-89-069
Issue Date	:	September 25, 1989
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE OWNERS/OPERATORS OF BASCULE BRIDGES TO INSTALL CAUTION LIGHTS AND DAYLIGHT MARKINGS AT ELEVATION POINTS ON BRIDGE LEAFS WHERE THEY PROTRUDE OVER NAVIGABLE CHANNELS TO IDENTIFY TO MARINERS THE POINT AT WHICH FULL SKYWARD CHANNEL CLEARANCE IS NOT AVAILABLE TO TRANSITING VESSELS; THE LIGHTS SHOULD ACTIVATE WHEN THE BRIDGELEAFS ARE IN THE NORMAL FULLY OPEN POSITION.

Recommendation Number	:	M-89-070
Issue Date	:	September 25, 1989
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE THAT BRIDGE OWNERS/OPERATORS PROVIDE IN BASCULE BRIDGE PERMIT APPLICATIONS THE ANGLE OF THE BRIDGELEAF(S), THE MAXIMUM VERTICAL CLEARANCE AT THE FENDERS AND AT THE BRIDGELEAF ENDS, AND THE EXTENT OF HORIZONTAL CHANNEL CLEARANCE OVER WHICH FULL SKYWARD CLEARANCE IS AVAILABLE WHEN THE BRIDGE LEAFS ARE IN THE FULLY OPEN POSITION.

Log Number M-0356

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Accident Synopsis:

AT 1605 ON DECEMBER 15, 1988, THE 279-FOOT-LONG U.S. MOBILE OFFSHORE DRILLING UNIT ROWAN GORILLA I CAPSIZED AND SANK IN THE NORTH ATLANTIC OCEAN ABOUT 500 NAUTICAL MILES SOUTH EAST OF HALIFAX, NOVA SCOTIA, CANADA. THE ROWAN GORILLA I, A SELF-ELEVATING TYPE DRILLING RIG, WAS BEING TOWED BY THE 245-FOOT-LONG BAHAMIAN TUG SHIT LONDON FROM HALIFAX TO GREAT YARMOUTH, UNITED KINGDOM WHEN THE TOWLINE BROKE ABOUT 0220 ON DECEMBER 15, DURING A SEVERE STORM. AT 1340 ON DECEMBER 15, THE 27 PERSONS ABOARD THE ROWAN GORILLA I ABANDONED THE RIG USING ONE OF THE RIG'S SURVIVAL CAPSULES. WHEN THE RIG WAS ABANDONED, THERE WERE 50-FOOT-HIGH SEAS AND THE WIND WAS BLOWING AT ABOUT 60 KNOTS. ABOUT 1200 ON DECEMBER 16, WHEN THE SEAS HAD SUBSIDED TO ABOUT 15 FEET IN HEIGHT, THE 27 PERSONS WERE RESCUED FROM THE SURVIVAL CAPSULE BY THE SHIT LONDON CREW. THE ESTIMATED VALUE OF THE RIG WAS \$90 MILLION.

Recommendation Number : M-89-088
Issue Date : November 07, 1989
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE REMOTE GAUGING DEVICES FOR ALL TANKS ON SELF-ELEVATING MOBILE OFFSHORE DRILLING UNITS.

Recommendation Number : M-89-090
Issue Date : November 07, 1989
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE APPLICANTS FOR THE OFFSHORE INSTALLATION MANAGER LICENSE WITH A BOTTOM BEARING UNIT UNDERWAY ENDORSEMENT TO PROVIDE CERTIFICATION OF EXPERIENCE OBSERVING AND DIRECTING BOTH FIELD AND OCEAN MOVES.

Recommendation Number : M-89-091
Issue Date : November 07, 1989
Addressee : USCG
NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: CONDUCT A ONE-TIME INSPECTION OF THE LOCATION OF THE LAUNCHING EQUIPMENT FOR INFLATABLE LIFERAFTS ON SELF-ELEVATING MOBILE OFF SHORE DRILLING UNITS (MODU) AND, WHERE NECESSARY, REQUIRE THAT ALTERNATE LAUNCHING EQUIPMENT LOCATIONS BE PROVIDED TO PROTECT THE LIFERAFTS FROM BEING WASHED OVERBOARD BY WAVES WHEN THE MODU IS BEING TOWED.

Recommendation Number	: M-89-092
Issue Date	: November 07, 1989
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE BOTH THE MARINE AND INDUSTRIAL CREWS OF MOBILE OFF SHORE DRILLING UNITS (MODU) TO ATTEND A SURVIVAL TRAINING COURSE WHICH INCLUDES DRESSING OF IMMERSION SUITS, BOARDING OF LIFERAFTS FROM THE WATER, AND DEALING WITH THE STRESSES ASSOCIATED WITH ABANDONING A MODU UNDER ADVERSE CONDITIONS.

Recommendation Number	: M-89-093
Issue Date	: November 07, 1989
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE THAT THE STATION BILL ON MOBILE OFFSHORE DRILLING UNITS IDENTIFY BY NAME THE CERTIFICATED LIFEBOATMEN REQUIRED BY THE U.S. COAST GUARD CERTIFICATE OF INSPECTION.

Log Number M-0357

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD HAS BEEN COMMITTED TO IMPROVING THE SAFETY OF PASSENGER VESSELS CARRYING U.S. PASSENGERS FROM U.S. PORTS. THE SAFETY BOARD RECENTLY COMPLETED A STUDY THAT REVIEWED SAFETY ISSUES FOR THREE BROAD GROUPS OF VESSELS: DOMESTIC PASSENGER VESSELS, FOREIGN FLAG PASSENGER VESSELS OPERATING FROM U.S. PORTS AND CARRYING U.S. PASSENGERS, AND SOME STATE-REGULATED DOMESTIC PASSENGER VESSELS.

Recommendation Number : M-89-116
 Issue Date : December 05, 1989
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE ALL DOMESTIC PASSENGER VESSELS THAT CARRY 50 OR MORE PASSENGERS AND THAT OPERATE ON ALL ROUTES OTHER THAN RIVERS BE EQUIPPED WITH AN OPERATING GYROCOMPASS.

Recommendation Number : M-89-117
 Issue Date : December 05, 1989
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. GUARD: REQUIRE ALL DOMESTIC PASSENGER VESSELS THAT CARRY 50 OR MORE PASSENGERS AND THAT OPERATE ON ALL ROUTES OTHER THAN RIVERS BE EQUIPPED WITH AN OPERATING GYROSTABILIZED RADAR.

Log Number M-0359A

Accident Synopsis:

AT APPROXIMATELY 0820, ON AUGUST 29, 1988, THE NUCLEAR POWERED AIRCRAFT CARRIER USS DWIGHT D. EISENHOWER (CVN 69), WHILE ENTERING THE HARBOR AT HAMTON ROAD, VIRGINIA, STRUCK THE ANCHORED SPANISH BULK CARRIER URDULIZ. THE URDULIZ WAS ANCHORED ADJACENT TO THE ENTRANCE REACH CHANNEL WAITING FOR A BERTH AT THE COAL LOADING PIERS AT LAMBERTS POINT, NORFOLK, VIRGINIA. THE EISENHOWER WAS RETURNING TO ITS HOME PORT OF NORFOLK, VIRGINIA, AFTER A 6-MONTH DEPLOYMENT IN THE MEDITERRANEAN SEA. NO ONE WAS INJURED. THE ACCIDENT RESULTED IN \$2 MILLION IN ESTIMATED DAMAGE TO THE EISENHOWER AND \$317,128 IN DAMAGE TO THE URDULIZ.

Recommendation Number : M-90-008
 Issue Date : February 22, 1990
 Addressee : USCG
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Recommendation Subject

THE NTSB RECOMMENDS THE U.S. COAST GUARD: ESTABLISH ADDITIONAL BUOYS ON THE NORTHERN SIDE OF THE ENTRANCE REACH CHANNEL TO DELINEATE THE CHANNEL LIMITS.

Log Number M-0365C

Accident Synopsis:

ON JUNE 14, 1989, THE U.S. TUG BARCONA WAS UNDER WAY FROM LONG BEACH, CALIFORNIA, IN SAN PEDRO CHANNEL WITH TWO EMPTY DECK BARGES IN TANDEM TOW ASTERN, BOUND FOR SANTA CATALINA ISLAND. THE U.S. NAVY NUCLEAR ATTACK SUBMARINE USS HOUSTON WAS OPERATING SUBMERGED IN THE SAME AREA. AT 0430, THE HOUSTON PREPARED TO COME TO PRISCOPE DEPTH IN ORDER TO OBTAIN A NAVIGATION FIX FROM A NAVIGATION SATELLITE. THE OPERATING CREW OF THE SUBMARINE DID NOT DETECT THE PRESENCE OF THE BARCONA'S TOW PRIOR TO REACHING PRISCOPE DEPTH. THE SUBMARINE CAME TO PRISCOPE DEPTH CLOSE TO THE BARCONA AND ITS TOW, AND AN ANTENNA THAT HAD BEEN RAISED TO OBTAIN THE NAVIGATIONAL FIX SNAGGED THE BARCONA'S TOWLINE. WHEN THE SUBMARINE CREW REALIZED THAT THEY WERE PERILOUSLY CLOSE TO SURFACE VESSELS, THEY EXECUTED AN EMERGENCY DIVE AT FULL POWER. THE FORCE OF THE DIVING SUBMARINE PULLED THE STERN OF THE TUG DOWN AND CAUSED THE TUG TO FLOOD THROUGH OPEN EXTERIOR MAIN DECK DOORS, AND THE TUG SANK. TWO OF THE THREE CREWMEN WERE ABLE TO ESCAPE FROM THE SINKING TUG AND WERE LATER RESCUED. ONE CREWMAN, HOWEVER, REMAINS MISSING AND IS PRESUMED DEAD.

Recommendation Number	: M-90-077
Issue Date	: October 22, 1990
Addressee	: USCG
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE (AFTER SEEKING LEGISLATIVE AUTHORITY, IF NECESSARY) THAT ALL OCEAN TOWING VESSELS BE EQUIPPED WITH AN EMERGENCY TOWLINE RELEASE MECHANISM OPERABLE FROM THE PILOTHOUSE AND EACH STEERING STATION.

Log Number M-0368

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the USCG since 1987 that have been classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Accident Synopsis:

ON JUNE 29, 1989, THE U.S. SELF-ELEVATING UNINSPECTED LIFT BOAT M/V TITAN FINISHED ITS WORK AT CORPUS CHRISITI OIL AND GAS BLOCK 427 WHERE IT HAD BEEN ELEVATED IN ABOUT 95 FEET OF WATER. THE TITAN HAD A CREW OF FOUR, PLUS FIVE LAREDO CONSTRUCTION, INC., EMPLOYEES ABOARD. ABOUT 1330 THE MASTER LOWERED THE LIFTBOAT AND HEADED IT TOWARD FREPORT, TEXAS. WHILE THE 160-FOOT LEGS WERE BEING RAISED, THE TITAN BEGAN LISTING TO STARBOARD. THE MASTER BELIEVED THE LIST WAS CAUSED BY MUD ON THE STARBOARD LEG PAD. HOWEVER, THE MASTER FOUND ON INSPECTION THAT THE STARBOARD LEG WAS FLOODED AND GUSHING WATER ON DECK THROUGH A FRACTURE OR FRACTURES IN THE LEG. THE MASTER DIRECTED THE LEGS TO BE LOWERED TO IMPROVE THE STABILITY OF THE VESSEL. WHILE THE LEGS WERE BEING LOWERED THE TITAN CAPSIZED ABOUT 1345.

Recommendation Number	:	M-90-092
Issue Date	:	January 14, 1991
Addressee	:	USCG
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE U.S. COAST GUARD: REQUIRE THAT LIFTBOATS BE EQUIPPED WITH PRIMARY LIFESAVING EQUIPMENT THAT PROTECTS PERSONS FROM WATER IMMERSION.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FRA since 1 Jan 1987 and classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Log Number M-0355A

Accident Synopsis:

ON MAY 6, 1988, THE 500-FOOT-LONG CYPRIAN BULK CARRIER PONTOKRATIS WAS PROCEEDING OUTBOUND IN THE CALUMET RIVER UNDER THE CONTROL OF A CANADIAN PILOT WITH THE ASSISTANCE OF TWO HARBOR TUGS. WHILE TRANSITING THE CSXT BRIDGE DRAW, THE NAVIGATION BRIDGE OF THE PONTOKRATIS STRUCK THE CSXT RAIL ROAD BASCULE BRIDGE LEAF, AND THE BRIDGE LEAF COLLAPSED ATOP THE VESSEL'S WHEELHOUSE, ABOUT 2009. THE PILOT, THE MASTER, AND CREWMEMBERS EXITED THE WHEELHOUSE AND RAN ONTO THE STERN OF THE VESSEL. NO ONE WAS INJURED AS A RESULT OF THE ACCIDENT. THE CSXT BRIDGE WAS A TOTAL LOSS, ESTIMATED BETWEEN \$10 AND \$12 MILLION. THE NAVIGATION BRIDGE OF THE PONTOKRATIS WAS CRUSHED, AND THE DAMAGE TO THE VESSEL WAS ESTIMATED TO BE ABOUT \$2.5 MILLION.

Recommendation Number	: M-89-078
Issue Date	: September 25, 1989
Addressee	: FRA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: AMEND 49 CFR 219.201 TO INCLUDE SERIOUS ACCIDENTS INVOLVING RAILROAD BRIDGES AND THE OPERATORS OF THESE BRIDGES EVEN WHEN A TRAIN IS NOT INVOLVED.

Log Number R-0567

Accident Synopsis:

THE NATIONAL TRANSPORTATION SAFETY BOARD HAS HAD A LONG STANDING OBJECTIVE TO IMPROVE SAFETY AT RAILROAD/HIGHWAY GRADE CROSSINGS. IN CALENDAR YEAR 1985, THE SAFETY BOARD INVESTIGATED 75 ACCIDENTS INVOLVING PASSENGER/COMMUTER TRAINS TO DETERMINE SAFETY ISSUES THAT COULD BE SUCCESSFULLY ADDRESSED BY FEDERAL AGENCIES, STATES, AND OTHER ORGANIZATIONS RESPONSIBLE FOR THE PUBLIC'S SAFETY. AS A RESULT OF A SAFETY STUDY BASED ON THESE 75 ACCIDENTS, THE SAFETY BOARD REMAINS CONCERNED THAT THE PUBLIC (MOTOR VEHICLE OCCUPANTS AND PASSENGERS ON TRAINS) AND RAILROAD EMPLOYEES ARE PLACED IN LIFE-THREATENING SITUATIONS DAILY AT GRADE CROSSING LOCATIONS, WHERE THE SAFETY BOARD BELIEVES SAFETY IMPROVEMENTS CAN BE ACCOMPLISHED.

Recommendation Number	: R-86-044
Issue Date	: January 13, 1987
Addressee	: FRA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: REQUIRE RAILROADS TO MAINTAIN SIGHT DISTANCES AT GRADE CROSSINGS, BY ENSURING THAT THE RAILROAD RIGHT-OF-WAY IS FREE OF OBSTRUCTING VEGETATION OR OTHER SIGHT OBSTRUCTIONS SUCH AS STANDING OR STORED RAILROAD CARS.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FRA since 1 Jan 1987 and classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Log Number R-0586C

Accident Synopsis:

ON MAY 18, 1986, 14 OF THE 23 PASSENGER CARS OF A NORFOLK AND WESTERN RAILWAY COMPANY (N&W) PASSENGER EXCURSION TRAIN POWERED BY A STEAM LOCOMOTIVE DERAILED NEAR SUFFOLK, VIRGINIA. OF THE APPROXIMATELY 1,000 TRAIN PASSENGER, ALL OF WHOM WERE N&W EMPLOYEES AND THEIR RELATIVES AND GUESTS, 177 WERE INJURED; 19 OF THE INJURED WERE HOSPITALIZED. THE ESTIMATED COST OF DAMAGE WAS \$231,530.

Recommendation Number : R-87-034
 Issue Date : December 09, 1987
 Addressee : FRA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: AMEND 49 CFR 213.333 (B) AND (C) TO ESTABLISH PROCEDURES FOR INSPECTION OF TRACK IN MULTIPLE TRACK AREAS AND TO DEFINE THE MAXIMUM SPEED FOR RIDING OVER THE TRACK IN A TRACK INSPECTION VEHICLE.

Log Number R-0593A

Accident Synopsis:

ON OCTOBER 9, 1986, EASTBOUND NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK) PASSENGER TRAIN 8 DERAILED IN FALL RIVER, WISCONSIN. EACH OF THE FREIGHT TRAINS PRECEDING TRAIN 8 RECEIVED INFORMATION THAT PREPARED THEM EITHER TO CROSS OVER FROM ONE TRACK TO ANOTHER AT FALL RIVER BECAUSE OF TRACK WORK IN THE AREA OR TO STOP AT FALL RIVER FOR INSTRUCTIONS. HOWEVER, THE ENGINEER OF TRAIN 8 DID NOT HAVE ANY ADVANCE NOTIFICATION OR TRAIN ORDER TO INDICATE THAT HIS TRAIN WAS TO CROSS OVER FROM THE EASTWARD TO THE WESTWARD TRACK IN FALL RIVER. AS A RESULT, TRAIN 8 ENTERED THE CROSSOVER AT 70 MPH AND THE LOCOMOTIVE UNITS OVERTURNED. THE AUTHORIZED SPEED FOR THE CROSSOVER WAS 10 MPH. TWO LOCOMOTIVE UNITS AND 10 PASSENGER CARS DERAILED; THE FIREMAN WAS KILLED, TWO CREWMEMBERS WERE INJURED SERIOUSLY, AND TWO RECEIVED MODERATE INJURIES. OF THE 215 PASSENGERS ON BOARD, 26 WERE INJURED.

Recommendation Number : R-87-064
 Issue Date : February 08, 1988
 Addressee : FRA
 NTSB Status : CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: MODIFY THE REGULATIONS FOR THE TESTING OF RADIOS USED IN OPERATIONS TO BE TESTED AT EACH CREW CHANGE LOCATION TO DETERMINE THAT THE RADIO WILL TRANSMIT AND RECEIVE OVER A DISTANCE EQUAL TO THE LONGEST DISTANCE BETWEEN BASE STATIONS ON THE ROUTE THE TRAIN IS TO TRAVEL.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FRA since 1 Jan 1987 and classified as Closed--Unacceptable Action
 -- AS OF 03/19/1993 --

Log Number R-0611
 Accident Synopsis:

ON NOVEMBER 12, 1987, NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)/MASSACHUSETTS BAY TRANSPORTATION AUTHORITY (MBTA) COMMUTER TRAIN 8110 WAS STANDING PARTIALLY BERTHED AT THE BACK BAY STATION PLATFORM IN BOSTON, MASSACHUSETTS, WHEN IT WAS STRUCK FROM THE REAR BY AMTRAK/MBTA COMMUTER TRAIN 8114.

Recommendation Number	:	R-BB-078
Issue Date	:	November 29, 1988
Addressee	:	FRA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: EXPAND TITLE 49 CODE OF FEDERAL REGULATIONS PART 236 TO REQUIRE THAT SIGNAL CIRCUITS BE DESIGNED SO THAT THEY CAN NOT BE RESET UNTIL THE ENTIRE SIGNAL BLOCK IS UNOCCUPIED.

Recommendation Number	:	R-BB-079
Issue Date	:	November 29, 1988
Addressee	:	FRA
NTSB Status	:	CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: EXPAND TITLE 49 CODE OF FEDERAL REGULATIONS 236.513 TO REQUIRE THAT WHEN A CAB SIGNAL CHANGES TO DISPLAY A MORE RESTRICTIVE ASPECT, THE AUDIBLE INDICATOR WILL PRODUCE A DIFFERENT WARNING SOUND WHEN THE CAB SIGNAL DISPLAYS ITS MOST RESTRICTIVE ASPECT.

NTSB SAFETY RECOMMENDATIONS

Recommendations Addressed to the RSPA since 1 Jan 1987 classified as Closed Unacceptable
 -- AS OF 03/19/1993 --

Log Number I-00908

Accident Synopsis:

ON SEPTEMBER 8, 1987, A NEW ORLEANS TERMINAL (NOT) CREW MOVED SIX TANK CARS OF BUTADIENE FROM THE NOT'S OLIVER YARD IN NEW ORLEANS, LOUISIANA, AND AT 7:35 P.M. PLACED THEM ON TRACK NO. 3 OF THE CSX TRANSPORTATION'S (CSXT) TERMINAL JUNCTION INTERCHANGE YARD (INTERCHANGE YARD) FOR DELIVERY TO THE CSXT. ABOUT 1:50 A.M. ON SEPTEMBER 9, 1987, BUTADIENE LEAKING FROM ONE OF THE TANK CARS WAS IGNITED AND THE RESULTING FLAMES RISING ABOUT 100 FEET INTO THE AIR ENGULFED BOTH BRIDGE SPANS OF INTERSTATE 10. THE FIRE RECEDED TO THE LEAKING TANK CAR WHERE IT BURNED BENEATH THE TANK CAR UNTIL 1:55 P.M. ON SEPTEMBER 10, 1987. DURING THE EMERGENCY, MORE THAN 200 CITY BLOCKS WERE EVACUATED AFFECTING 800 TO 1,000 RESIDENTS.

Recommendation Number	: I-88-006
Issue Date	: October 24, 1988
Addressee	: RSPA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION: DEFINE EXPLICITLY IN THE FINAL RULE OF DOCKET MM-126C THE INFORMATION THAT MUST BE PROVIDED TO CHEMTREC BEFORE A SHIPPER OF HAZARDOUS MATERIALS CAN LIST ON ITS SHIPPING DOCUMENTS THE CHEMTREC EMERGENCY TELEPHONE NUMBER IN LIEU OF ITS 24-HOUR EMERGENCY TELEPHONE NUMBER.

Log Number P-0293

Accident Synopsis:

ON MAY 12, 1989, A SOUTHERN PACIFIC TRANSPORTATION COMPANY (SP) FREIGHT TRAIN DERAILED IN SAN BERNARDINO, CALIFORNIA, WITH PORTIONS OF THE ENGINES AND RAIL CARS COMING TO REST OVER A 14-INCH PRODUCTS PIPELINE BEING OPERATED BY CALNEV PIPE LINE COMPANY (CALNEV) IN EXCESS OF 1,600 PSIG. AFTER LEARNING OF THE DERAILMENT, CALNEV PERSONNEL STOPPED PUMP ING PRODUCT THROUGH THE PIPELINE. PRESSURE IN THE PIPELINE NEAR MILEPOST 6.8, THE AREA OF THE DERAILMENT, WAS REDUCED TO ABOUT 1,100 PSIG WHEN THE PUMPS WERE SHUT DOWN; HOWEVER, CALNEV PERSONNEL DESIRED TO REDUCE THE PRESSURE TO ABOUT 300 PSIG TO PROVIDE GREATER SAFETY IN THE EVENT THAT IS PIPELINE HAD BEEN DAMAGED.

Recommendation Number	: P-89-005
Issue Date	: August 09, 1989
Addressee	: RSPA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION: REQUIRE PIPELINE OPERATORS THAT HAVE "ALL CLEAR CHECK VALVES" MANUFACTURED BY THE WHEATLEY COMPANY INSTALLED IN THEIR PIPELINE SYSTEMS TO TEST THESE VALVES FOR PROPER CLOSURE AND REQUIRE THE REPLACEMENT OF ANY THAT FAIL TO CLOSE PROPERLY.

NTSB SAFETY RECOMMENDATIONS

Safety Recommendations Issued to the FTA since 1987 classified as Closed--Unacceptable Action
-- AS OF 03/19/1993 --

Log Number R-D604A
Accident Synopsis:

IN 1987, THE NATIONAL TRANSPORTATION SAFETY BOARD UNDERTOOK A SAFETY STUDY TO REVIEW THE FIRST FULL YEAR OF IMPLEMENTATION OF THE CURRENT FEDERAL RAILROAD ADMINISTRATION'S (FRA) ALCOHOL AND DRUG RULE. ALSO, THE SAFETY BOARD WANTED TO EXAMINE WHAT ACTIONS BEYOND THOSE REQUIRED BY THE RULE COULD BE UNDERTAKEN BY THE RAILROADS AND THE FEDERAL GOVERNMENT TO REDUCE HIGH LOSSES FROM ACCIDENTS INVOLVING RAILROAD EMPLOYEES IN SAFETY-SENSITIVE POSITIONS WHO CONTINUE TO USE ALCOHOL AND/OR DRUGS ON THE JOB.

Recommendation Number	: R-88-038
Issue Date	: August 09, 1988
Addressee	: FTA
NTSB Status	: CLOSED - UNACCEPTABLE ACTION

Recommendation Subject

THE NTSB RECOMMENDS THAT THE URBAN MASS TRANSPORTATION ADMINISTRATION: REQUIRE PERIODIC MEDICAL EXAMINATIONS, INCLUDING ALCOHOL AND DRUG SCREENING, FOR RAIL RAPID TRANSIT EMPLOYEES IN SAFETY-SENSITIVE POSITIONS.

"MOST WANTED" SAFETY ISSUES

Mr. WOLF. Are there any egregious things that when you look at it, you think that if it had only been put into effect back in 1978 that wouldn't have happened? Do you have any stories like that?

Mr. SWEEDLER. If you look at our "Most Wanted" list you can pick some off that list. Take the administrative license revocation. We have been working very closely with the interest groups in Virginia in trying to get this through. They finally passed a somewhat different version of it this year. If all States would pass these laws, we would have a total of almost 2,000 lives saved.

Because excess flow valves are not required, every day a new service line goes in it lacks this valve. It is like an electric circuit breaker. So we are seeing things happening in just normal operation that don't include these extra safety devices.

So these are things—and there are many more of them on the list.

Mr. VOGT. Also, in each accident report—Mr. Baxter just reminded me—we have a history of relevant recommendations that have been made that relate to our finding of probable cause in any given accident. Most of the time, we find a chain of recommendations. Not all of them would have prevented the accident had they been adopted, but they are certainly relevant to the causal factors.

FOREIGN AIR CARRIERS

Mr. WOLF. Do you put out a list of foreign carriers that are not safe?

Mr. VOGT. No, sir.

Mr. WOLF. Is there anyone who puts out such a list?

Mr. VOGT. Not that I am aware of.

Mr. WOLF. You're always hearing of an American on an aircraft abroad. I have been on a couple that at times I was just thankful to get to the next place. Sometimes you really have no choice. Other times, you do.

Does anyone look at the safety records of some of these carriers? Is there anyone to give the American traveler some choice when you're abroad? You may be in Europe and you may have the choice between Lufthansa, which has a relatively good safety record, and X.

Is there anything done with regard to that?

Mr. VOGT. Tim, are you aware of any?

Mr. FORTE. The closest thing would be consumer complaints to DOT, but I don't know that they publish anything. Complaints are frequently logged.

ICAO prescribes minimum standards for both their operational and airworthiness standards. The majority of the states that are signatories to ICAO are complying with those minimum standards, and many far exceed them, such as Lufthansa.

Mr. WOLF. There is always a flight in China and places like that where you hear Americans are on-board. You wonder what the safety requirements are.

I am not suggesting that this is a job for your agency, but there should be some gathering of data with regard to the safety records, particularly of foreign carriers.

Mr. FORTE. Of course, we are there as an accredited representative if it is a U.S. manufactured aircraft or engine.

CHINESE AVIATION ACCIDENTS

Mr. WOLF. But they manufacture McDonnell Douglas in China. China has a record of using slave labor in gulags. I have been in one whereby they had people who were arrested in Tiennamen Square making shoes and socks for export to the United States.

I am not saying that the Tiennamen Square demonstrators are making the parts, but there are 4 million to 5 million people in gulags in the Soviet Union. We have indications that some of the more prominent goods that are made for export are made with slave labor.

How do we know? Do you go into the aircraft manufacturing plants in China to see if they meet the certification of the United States?

Mr. FORTE. The FAA does. We were recently in China as an accredited representative on a 737 accident, and we were a party to the investigation.

Mr. WOLF. And what did you find?

Mr. FORTE. It is still an ongoing investigation, but it appears to be an operational accident.

Mr. WOLF. How many crashes have taken place with Chinese aircraft in the last 10 years?

Mr. FORTE. We wouldn't have that information.

Mr. WOLF. Who would have it?

Mr. VOGT. There have been four in the last year.

Mr. WOLF. I know that.

Mr. FORTE. If it is a Russian-made aircraft, we wouldn't have those records. ICAO may.

Mr. WOLF. Could you get those for me? I happen to think that the Chinese are probably violating just about every regulation there is. I am not suggesting that slave labor is flying the plane, but they may be manufacturing the plane.

How many Americans were on those four planes that crashed?

Mr. VOGT. I think there were two or three.

Mr. WOLF. For the record, how many crashes have taken place with Chinese aircraft in the last 10 years?

How many Americans were on those planes?

[The information follows:]

The International Civil Aviation Organization (ICAO) reports that since 1970 there have been 28 reported aviation accidents in China. This figure is probably low in that some accidents have gone unreported. Additionally, some accidents involving civilian passengers were operated under military identification and; therefore, were not reported to ICAO. ICAO reports that it does not require members to provide the nationality of passengers, therefore it could not provide data on the number of U.S. citizens involved in accidents in China.

PEGASUS INVESTIGATION

Mr. WOLF. Concerning Orbital Science, that was a strange one when your budget is so tight. Why would you be involved in that?

Mr. FORTE. The Safety Board was involved in the Challenger accident as technical representatives. As a result of our work there, when DOT was given the commercial space responsibility, through

a memorandum of understanding, we were asked and agreed to be the investigatory agency for commercial space launch only.

Mr. WOLF. This is kind of the beginning?

Mr. FORTE. This is the first incident. This was not an accident. We were asked to investigate.

ALCOHOL AND MARINE

Mr. WOLF. What does the Coast Guard do concerning alcohol-related problems in intercostal waterways?

Mr. SWEEDLER. They work with the States and in areas where they have jurisdiction. They do have patrols that actually can test someone for alcohol if they think there is suspicion.

Mr. WOLF. If you are caught off the coast of Cape May, is that a New Jersey offense?

Mr. SWEEDLER. That depends. If it is in waters that the Coast Guard has responsibility, they would have the ability to do that, and they do.

Mr. WOLF. Is there a Federal law with regard to this?

Mr. SWEEDLER. They have regulations and rules about the use of alcohol.

Mr. WOLF. But they are regulations and not laws?

I am wondering why the Federal Government is not behind the States.

Mr. SWEEDLER. They are working pretty closely with the States on this. They do have rules. I don't believe there is a law about it, but their regulations do cover the use of alcohol. And they even have alcohol testing.

Mr. WOLF. Do you think if we're trying to get the States to do this, there ought not to be a corresponding Federal? The Coast Guard certainly does boating on the intercostal waterways.

Mr. SWEEDLER. They appear to have the authority to do that.

Mr. WOLF. Do you know of any prosecutions?

Mr. SWEEDLER. I know they have had some in the past. It is one of their emphasis areas.

Mr. WOLF. I will ask them when they come.

I have this memo with regard to the Denver airport cargo facility I would like to leave with you. I don't know how valid it is, so I would appreciate it if you would take a look at this and give us your opinion.

Mr. VOGT. We'll be happy to do that.

Mr. WOLF. Thank you.

Thank you, Mr. Chairman.

NTSB COMPUTER SIMULATIONS

Mr. CARR. Thank you, Mr. Wolf.

We have a number of questions we're going to ask for the record in the interest of time. It is the lunch hour and we are all anxious to conclude the hearing.

I have seen some of the media presentations that you have put together, the simulations of various aircraft accidents and the like. I wonder if next year when you testify on your reports you would ask some of your people to bring some of those presentations with you.

Mr. VOGT. We would be delighted to do so.

Mr. CARR. I want to try to move this subcommittee toward using more of the technology that is available so that we can have multimedia presentations. Hopefully, next year we will be equipped to do some things that we aren't equipped to do today.

I know that you have some video presentations. I have seen them and they are good. I think they educate very, very well. We would like to have you work with us to bring some of those presentations along.

Mr. VOGT. We look forward to that. I appreciate your interest in that.

MAJOR GOALS OR OBJECTIVES

Mr. CARR. Mr. Vogt, this is your first year as Chairman of the National Transportation Safety Board. Have you established any major goals or objectives that you want to accomplish during this year and beyond?

[The information follows:]

I would first like to state that since coming to the National Transportation Safety Board (NTSB) I have been very impressed by the quality of the staff. The NTSB has a clear mission, and with our dedicated staff I believe we do a good job.

I recently toured the field offices, and I plan to pay a considerable amount of attention on our field operations. The vast number of Safety Board investigations are conducted in the field, and I would like the Board to be more aware of field operations, particularly general aviation.

Accident rates in general aviation have gone down, and I would like to take a look to see if we can find some trends, either encouraging or discouraging.

I also plan to encourage the NTSB's continued involvement in the participation of foreign investigations. We were recently invited to share our investigative techniques with the Chinese and the Russians, and I believe we need to foster and encourage this type of dialogue.

Two years before I came to the NTSB the agency was reorganized. Major innovative changes were made and I believe the reorganization is working. There may be more things to be done, but it's too early for me to make a judgment.

GENERAL TRANSPORTATION SAFETY

Mr. CARR. How would you characterize the safety of the various transportation modes, that is, aviation, highway, rail, transit, et cetera?

[The information follows:]

The safety of the transportation modes has improved significantly over the years and all the modes have made strides. Yet many problems remain for which there are no simple remedy.

For example, in order to characterize transportation safety in the marine mode it is necessary to view the various categories of vessels and vessel activity separately.

The number of recreational boating fatalities are second only to highway fatalities. Recreational boating safety regulations have been enacted by a number of states resulting in a slight decline in total fatalities, yet the number remains high.

Commercial passenger vessels have a good safety record, but the safety risk exposure is high. With the great numbers of passengers carried on a single vessel, particularly commuter ferries and cruise vessels, we cannot afford to have a catastrophic accident. Therefore, the risk continues to be high.

Highway fatalities have generally declined over the last decade, but far too many individuals are still killed in highway accidents. The highway safety program throughout the country has had a positive effect in improving highway safety. But the magnitude of annual highway fatalities dwarf fatal accident statistics in all other modes.

Similar statements can be made about the other modes and key safety issues remain to be addressed. In fact, the delay in instituting specific safety recommendations with the potential for saving many lives was the main reason the Safety Board

created its "Most Wanted" list. The items on this list receive the Safety Board's highest visibility and strongest follow-up activities with the government and private sector.

"MOST WANTED" SAFETY ISSUES

Mr. CARR. In recent years, NTSB has established a "Most Wanted" list of safety recommendations.

What has been the effectiveness of this means of highlighting important safety recommendations?

[The information follows:]

The Safety Board adopted its "Most Wanted" list of safety issues in September 1990. The original list contained 18 transportation safety issue areas. Many of these issues, such as the need for pipeline excess flow valves; and the identification of aviation pilots with alcohol abuse problems, were being carried as "Open—Unacceptable" by the Board. Since September 1990, the Board has seen many of the once "unacceptable" areas move into the "acceptable" status; and in the case of the identification of aviation pilots with alcohol abuse problems, even moved off of the list entirely because of positive action by the Federal Aviation Administration. It should be noted also that the pipeline excess flow valve issue has seen federal legislation passed addressing the problem, and a final rule has been drafted by the Department of Transportation.

The Board believes that this type of issue area highlighting based on its open safety recommendations has been very successful in bringing about changes that have enhanced the safety of the nation's transportation system.

TRANSPORTATION IMPROVEMENTS

Mr. CARR. In what areas has the Safety Board had the greatest effect in improving transportation safety?

[The information follows:]

While in the early years of its existence the Safety Board concentrated much of its attention on improving the hardware and mechanical components in the various transportation modes, in recent years it has become clear that the major remaining impediments to further improvements in transportation safety lie in the human performance area. Thus, much of the Board's effort and some of the most significant improvements in safety have come about as a result of a focus in these areas. Our concentration on identifying and seeking solutions to the abuse of alcohol and drugs in the various transportation modes has had significant effects. Similarly, our focus on the development of procedures and mechanisms to provide a timely alert to vehicle operators of safety hazards or to automatically compensate for operator delay or inattention to such hazards has had gratifying results. Finally, our emphasis on improved training for vehicle operators in all modes—with special attention to training in communications between crews and system controllers, and in anticipating, recognizing and responding appropriately to potentially hazardous situations—has stimulated greater efforts to provide such training.

NTSB EFFECTIVENESS

Mr. CARR. How does the Board evaluate whether it is having an impact on transportation safety?

How do you evaluate your effectiveness?

[The information follows:]

The ultimate indication of an impact on transportation safety, of course, is whether the number of accidents, fatalities and injuries occurring is rising or falling. As you know, the trend over the last several years, with respect to both the total number of accidents and the accident rate, in all modes of transportation, has been declining. While the Safety Board does not maintain that this long-term trend is solely or even in major part because of its actions, we do believe that the role we play in the total governmental and private sector effort to improve transportation safety is an essential one and does have a significant positive impact. Another measure of our effectiveness, we believe, is the degree to which our safety recommendations—our ultimate product—are accepted and implemented by those to whom they

are directed. The acceptance rate for our safety recommendations to all recipients has over the years been in excess of 77 percent, and currently stands at 82.1 percent.

BAC LEVELS

Mr. CARR. Most States have "per se" laws which assume drunk driving occurs at the 0.10 level. What medical or scientific evidence is there to suggest that different BAC levels should be established for youth as compared to adults?

[The information follows:]

The concept that is of most import in discussing a 0.00 BAC level for youth is not whether it is medically or scientifically established that the BAC should be lower, but that it is illegal in all states for a person under the age of 21 to have ingested any alcohol. Therefore, it can be said that the existing age 21 drinking laws already require a 0.00 BAC for anyone under the age of 21.

The statistical evidence is strong for prohibiting any level of alcohol in the blood of a young driver. As stated in the Board's March 11, 1993, letter to the States discussing this problem, "... young drivers are over-represented in traffic safety crashes and deaths. Thus, they continue to be a major traffic safety concern. In 1990, according to the NHTSA, drivers aged 15-20 years comprised only 7.1 percent of licensed drivers (11.9 million of 168.99 million), but accounted for 14.9 percent of all driver fatalities (3,568 of 23,904 driver fatalities). Further, while young drivers do only 20 percent of their driving at night, over half the crash fatalities of adolescent drivers occur during nighttime hours. ... first-year drivers (primarily ages 16 and 17) have twice the average number of crashes and, on a miles-driven basis, four times the number of crashes involving more experienced drivers."

Further, the Board letter stated, "... for example, male drivers aged 16 to 20 have 6 times the driver fatality risk in single vehicle crashes at BACs from 0.01 to 0.04 percent compared to male drivers age 25 and older at these low levels. One study indicates that the risk of a crash, especially a fatal crash, increases with increasing BAC levels, but that drivers age 16-19 have a higher risk of a fatal crash than older drivers at all BACs."

UNDERAGE DRIVER SAFETY RECOMMENDATIONS

Mr. CARR. How many lives do you estimate would be saved if your recommendations were adopted?

[The information follows:]

According to the National Highway Traffic Safety Administration, the age 21 laws throughout the country have saved an estimated 12,300 lives through 1991. Due primarily to the enactment and enforcement of age 21 laws, the proportion of alcohol related fatal crashes among drivers under the age of 21 was reduced from 53 percent in 1980 to a low of 29 percent in 1987. This proportion has begun to rise in the last 3 years going back up to 33 percent.

The safety recommendations issued by the Safety Board regarding the further enhancement and enforcement of youth drinking/driving laws will return the downward trend in the proportion cited above. With the trend in the percentage of fatal crashes in the age group cited moving downward again, there should be a corresponding increase in the number of lives saved due to the actions recommended by the Board. While the number of lives saved may not be as large as the number posted for the 1980 to 1988 period, it will be significant. Nearly 900 lives per year were saved from 1982 through 1991.

AVIATION FATALITIES

Mr. CARR. What do you believe are realistic goals or realistic incremental annual reductions in the number of aviation accidents and fatalities, and what percentage of this would be attributable to general aviation, commuter aviation, and large air carriers?

[The information follows:]

Because the accident rates in all areas of aviation have been reduced to such a low value, it will be very difficult to reduce them significantly further. Airline oper-

ations doubled in the 1990s and are expected to double again by the year 2001, despite the recent economic downturn. Although the growth in the numbers of operations will lead to an increase in the number of accidents involving U.S. interests, the accident rates will remain substantially the same.

USAIR FLIGHT 405 INVESTIGATION—WING DEICING PROCEDURES

Mr. CARR. The Safety Board just completed a major investigation of the USAir 405 which crashed at LaGuardia Airport killing 27 people in which you determined the probable cause of the accident to be ice on the wings. You cited "the failure of the airline industry" and the FAA to give flight crews proper guidelines and procedures to deal with wing icing. Some observers have called your findings in that investigation an indictment of unprecedented scope.

Would you elaborate on your findings and discuss what you meant by the "failure of the airline industry" to address wing deicing procedures?

[The information follows:]

For the purposes of its report, the Safety Board defined the "airline industry" as those government and industry organizations responsible for and capable of studying the problems associated with aircraft icing hazards, and disseminating information to flightcrews about these problems, and for developing technology and requirements to minimize the hazard. The Safety Board and industry following other accidents had acknowledged that flight crews might not be able to detect by visual observation the minute amount of wing contamination that can seriously degrade the airplane's performance. Nonetheless, the Federal Aviation Administration (FAA) and industry made the pilot responsible for assuring that the airplane was free of contamination before takeoff. Further, the pilot was not given good information about the effective anti-ice capability of deicing fluid nor was he/she given an accurate estimate of the delay time before takeoff. Thus, the flightcrew was confronted with a dilemma—to take off without certainty of the airplane's condition or taxi back to be confronted with additional extensive delay or flight cancellation.

Since the USAir 405 accident, the FAA and industry have developed positive guidelines to pilots based on existing weather conditions and deicing/anti-icing fluid holdover times. The Safety Board believed that these actions could have been taken sooner and might have prevented the USAir accident.

COCKPIT RESOURCE MANAGEMENT

Mr. CARR. The Safety Board also cited as a contributing cause of the USAir 405 accident inappropriate procedures used by, and inadequate coordination between the flight crew. Cockpit resource management and crew coordination have been implicated in other accidents investigated by NTSB.

Are the airlines and the FAA doing enough in this area?

[The information follows:]

One of the significant factors in the USAir 405 accident, in addition to the accumulation of ice on the upper surface of the airplane's wings, was the procedures used by the flightcrew during the takeoff. There was not a comprehensive briefing by the crew regarding the takeoff procedures—the captain decided to use a lower-than-authorized V_1 go/no go, decision speed. This decision alone, would be of significance only in the event of an engine failure during takeoff. However, the first officer, who had limited experience, called out V_r , the takeoff rotation speed at a lower than prescribed airspeed as well. The captain rotated the airplane about 5 knots below the proper speed and this procedure placed the airplane nearer to an aerodynamic stall, at this point of lift-off any margin that might have existing was eliminated.

This lack of crew coordination has been evident in other accidents investigated by the Board—both air carriers operating under Part 121 and commuters operating under Part 135. The Safety Board was pleased by the efforts of a Human Factors task force and the plan developed to address human factors in air carrier training programs and we will continue to monitor the implementation of such training.

SCENIC AIR TOURS

Mr. CARR. On February 22, 1993, the Safety Board issued a final report on Scenic Air Tours, a fatal sightseeing accident which occurred in Hawaii on April 22, 1992. The Safety Board has recommended to the FAA that it create a special regulatory classification for commercial sightseeing flights.

Please outline your findings and the basis for your recommendations.

[The information follows:]

As a result of its investigation of the aviation accident involving Scenic Air Tours, the Safety Board recommended that the FAA, "revise the Federal Aviation Regulations as needed to create a specific classification for, and operating rules governing, commercial air tour operators based on the complexity of flight operations, aircraft flown, flight frequency, number of passengers carried, air traffic densities in the areas of operation, and other relevant factors."

The Safety Board's investigation found that the air tour industry currently transports about 2,000,000 passengers annually. Many of the operations are conducted within 25 nautical miles of the departure point and therefore can operate under the provisions of 14 CFR 91, which are less stringent than operating rules provided by 14 CFR part 135 which governs commuter and on-demand air taxi operations. Although Scenic Air Tours operated under the provisions of 14 CFR 135, its airplanes were certificated for flight only in visual meteorological conditions. Additionally, the investigation determined that the captain of the accident flight had falsified his flight experience when he applied for a pilot position at Scenic Air Tours. He did not possess the minimum hours of experience required by the company, either at the time he was hired or at the time of the accident. The FAA does not require operators to perform substantive preemployment background checks of the aeronautical experience of pilots.

The Safety Board believes that the nature and structure of the air tour industry has unique features that may not be found in typical operations governed by 14 CFR Parts 91 and 135. The abnormal ratio of flight cycles to flight hours, weather conditions unique to the geographical area of operation, structured flow of traffic, and the relatively high density of air tour operators near scenic areas result in safety concerns that are not adequately addressed by the current regulations. The Safety Board believes the operators that carry high volumes of passengers on multiple daily flights or that have ground and flight operations that exhibit characteristics typically associated with part 135 commuter operations, including daily flight frequency, advertised schedules, standard tour routes, formalized reservation or ticketing procedures, terminal buildings and passenger waiting areas, should be subject to a greater degree of regulation and oversight than that provided to typical on-demand air taxi operations. However, the Safety Board also believes that the smaller air tour operators that fly only a few short routes and carry few passengers in noncomplex aircraft require greater FAA guidance, standards, and surveillance than currently exists. The Safety Board believes the FAA can enhance the level of safety of the operations either by expanding the existing regulatory framework contained in 14 CFR Part 135, or by creating a new part for commercial air tour flights.

PILOT PRE-EMPLOYMENT SCREENING

Mr. CARR. Your investigation in Scenic Air Tours concluded that the captain falsified his employment application and résumé, but the company did not conduct background pre-employment checks of the pilot's experience, nor was it required to under FAA rules. The Safety Board reissued a recommendation that the FAA require commercial operators to conduct substantive pilot pre-employment screening.

What is your response to the FAA's position that it favors a voluntary effort by the operators?

[The information follows:]

The Safety Board first addressed this issue in a safety recommendation to the Federal Aviation Administration (FAA) in November 1987. Although the FAA

agreed with the intent of this safety recommendation, they did not agree that requiring background checks was necessary and, instead informed air carriers on the methods and merits of thorough pre-hiring background checks.

Based on the FAA's response and following a fatal commuter air carrier accident, the Safety Board again issued a safety recommendation on the same topic in November 1990. Following similar responses and actions by the FAA, the Safety Board classified this recommendation as "Closed-Unacceptable Action" in October 1992.

Our investigation of the recent Scenic Air Tours accident has again shown the importance of substantive preemployment screening practices, and further demonstrates the need for the FAA to require commercial operators to implement such programs. Accordingly, last month the Safety Board once again recommended that the FAA require commercial operators to implement these programs.

SIGHTSEEING OPERATIONS

Mr. CARR. There have been several recent accidents involving sightseeing operations in Hawaii and Arizona—Grand Canyon. In your opinion, does the FAA have sufficient resources in place to properly oversee sightseeing operations?

[The information follows:]

The Board expressed concern about the safety of sightseeing flights in the Scenic Air Tours accident report. The sightseeing industry currently transports about 2 million passengers annually, according to estimates by air tour industry spokespersons. Unfortunately, the Federal Aviation Administration (FAA) does not collect specific data on the flying activities of the industry, although the Board believes that they should. Thus, one of the Board's safety recommendations was to create a specific classification for the operators. Other safety recommendations addressed the need for more stringent operations specifications and regulatory oversight than they now receive.

One of the Board's concerns regards those operators that limit their routes to within 25 nautical miles of the departure point and, consequently, only need to comply with the provisions of Part 91 rather than those of Part 135. After some accidents in the Grand Canyon, a special regulation was issued to eliminate the 25 nautical miles provision, but only in the Grand Canyon airspace. Another change was to create a structured route system. The Board believes similar rules should apply to the Hawaiian airspace.

The FAA may require more resources to oversee sightseeing operations adequately. However, we believe that significant improvement could be achieved in this regard if the FAA were to implement the above mentioned measures, even with existing sources.

UNITED AIRLINES FLIGHT 811—CARGO DOOR

Mr. CARR. Last year, the Safety Board revised the probable cause of a 1989 United Airlines 811 accident in which the plane experienced explosive decompression due to an electrical malfunction in the cargo door. You had previously attributed the probable cause of the accident to an improperly latched door and improper maintenance and inspection of the door by United.

What caused you to revise your findings and conclusions?

[The information follows:]

On February 24, 1989, United Airlines flight 811, a Boeing 747-122, experienced an explosive decompression as it was climbing between 22,000 and 23,000 feet after taking off from Honolulu, Hawaii, en route to Sydney, Australia with 3 flightcrew, 15 flight attendants, and 337 passengers aboard. Nine of the passengers had been ejected from the airplane and lost at sea.

A year after the accident, the Safety Board was uncertain that the cargo door would be located and recovered from the Pacific Ocean. The Safety Board decided to proceed with a final report based on the evidence without the benefit of an actual examination of the door mechanism.

Subsequently, a search and recovery operation was begun by the U.S. Navy. The search and recovery effort was supported by Navy radar data on the separated cargo door, underwater sonar equipment, and a manned submersible vehicle. The

effort was successful, and the cargo door was recovered in two pieces from the ocean floor at a depth of 14,200 feet on September 26 and October 1, 1990.

Before the recovery of the cargo door, the Safety Board believed that the door locking mechanisms had sustained damage in service prior to the accident flight to the extent that the door could have been closed and appeared to have been locked, when in fact the door was not fully latched. This belief was expressed in the report and was supported by the evidence available at the time. However, upon examination of the door, the damage to the locking mechanism did not support this hypothesis. Rather the evidence indicated that the latch cams had been back-driven from the closed position into a nearly open position after the door had been closed and locked. The latch cams had been driven into the lock sectors that deformed so that they failed to prevent the back-driving.

Thus, as a result of the recovery and examination of the cargo door, the Safety Board's original analysis and probable cause were modified.

FAA OVERSIGHT OF FOREIGN AIR CARRIERS

Mr. CARR. In 1991, the FAA announced a new program to assess foreign air carrier compliance with international safety standards. The FAA found that 9 of 15 countries visited did not meet international standards and 9 countries did not provide any oversight to ensure that their carriers met international standards.

In a recent review of the FAA program, the General Accounting Office concluded that increased FAA safety oversight over foreign carriers is needed, and that the FAA's efforts to assess foreign countries' compliance with international safety standards does not go far enough to identify foreign aircraft with serious safety problems.

Based on your experiences investigating foreign air carrier accidents, what recommendations do you have for improving safety oversight of foreign carriers?

[The information follows:]

The Safety Board is aware that the Federal Aviation Administration (FAA) has increased its activities in the oversight of foreign air carriers operating under 14 CFR Part 129. Recent FAA action has resulted in several foreign air carriers being denied access to U.S. airports. The Safety Board recognizes that the surveillance of foreign air carriers can be difficult due to treaty agreements, foreign sovereignty concerns, and potential reciprocity. The Safety Board believes that the majority of foreign registered, passenger carrying aircraft operating under 14 CFR Part 129 are receiving adequate oversight by country of registry. The Safety Board's accident database indicates that there are very few accidents in the U.S. involving foreign registered aircraft, and the majority of these are cargo airplanes. However, the Safety Board recognizes that there are countries that are unable to provide the same level of oversight as the FAA.

The Safety Board believes that the FAA should continue to support foreign oversight authorities in improving their level of surveillance. Additionally, the Safety Board believes that the FAA's continued activities to monitor and assess foreign air carrier compliance with the international safety standards will have a significant impact on improving aviation safety.

FAA INSPECTION OF FOREIGN AIR CARRIERS

Mr. CARR. NTSB's report on the 1989 Suriname Airlines accident recommended that FAA perform more in-depth inspections of foreign air carriers.

What type of in-depth inspections did you envision and were your recommendations implemented?

[The information follows:]

The Safety Board participated in the Government of Suriname's investigation of the accident involving a Suriname Airlines aircraft that crashed near Paramaribo on June 7, 1989. However, the Government of Suriname and not the Safety Board

issued a report on the investigation of that accident. Nevertheless, on April 24, 1990, the Safety Board issued three recommendations to the FAA as a result of this accident, one of which dealt with inspections of foreign air carriers operating into the United States. Safety Recommendation A-90-51 urged the FAA to: "Perform periodic ramp and en route inspections of air carriers operating aircraft under 14 CFR Part 129 that are registered in the United States."

The purpose of this recommendation was to increase the two types of FAA inspections most likely to result in an increase in compliance with applicable regulations. These are ramp inspections, in which an inspector boards and inspects the status of a parked aircraft, but does not observe that aircraft in flight, and en route inspections, in which an inspector observes a flight of that aircraft.

On July 12, 1991, the FAA Administrator responded to the recommendation by saying, in part, that "... the FAA is currently conducting and agrees to continue to perform periodic ramp inspections of U.S. registered aircraft operated by foreign air carriers. . . . [However,] the FAA believes that periodic en route inspections [of these aircraft] should, for the most part, be conducted by inspectors of the State of the operator. . . ."

The Safety Board has classified the FAA's response to this recommendation as "Open—Acceptable Response" pending its review of the proposed guidelines that the FAA was to add to the Operations Inspector's Handbook. As of this date, the Safety Board has not been informed of changes to the Operations Inspector's Handbook. The Safety Board continues to believe that enhanced safety would result from an increase in both ramp and en route inspections of foreign aircraft operating in the United States under 14 CFR Part 129.

INTERCITY BUS SAFETY

Mr. CARR. Last week, the Safety Board testified before the Senate Commerce Subcommittee on Surface Transportation regarding the safety of intercity bus travel. I understand that your testimony raised some disturbing issues regarding the effectiveness of the FHWA's oversight of the intercity bus industry, and the lack of coordination between the FHWA, the ICC, and State regulators.

Would you share with us your recent findings on these issues?
[The information follows:]

Ineffective federal and state motor carrier oversight is an issue being looked into as a result of the accident that occurred July 26, 1992, in Vernon, New Jersey.

When a bus receives authority from the Interstate Commerce Commission (ICC) to operate, the ICC notifies the Federal Highway Administration (FHWA). Once notified, the FHWA is expected to enter the carrier into its management information system. Bus carriers must be entered into the system if the FHWA is to ever conduct a safety review or audit.

During our investigation of the Vernon, New Jersey accident, we found that the bus company involved in the accident was in the ICC's files, but not in the FHWA's motor carrier management information systems. While inclusion in the FHWA's system does not guarantee a safety review or audit, exclusion guarantees there won't be one.

After this accident the Safety Board, along with several state offices, conducted two roadside inspections of intercity buses in Pennsylvania and New Jersey. Seventy percent of the buses inspected in Pennsylvania were removed from service, and forty three percent of those inspected in New Jersey were removed from service. These findings cause concern, and we will continue to explore this issue.

State oversight is also an issue in this accident. The owner/operator was not authorized by the New York Department of Transportation (NY DOT) to operate in the State of New York. The owner/operator had received notices of violations from the NY DOT in June and September 1989 for failing to have a bus safety inspection, and for operating without authority.

Mr. CARR. Do you have any preliminary recommendations for the FHWA?

[The information follows:]

Safety recommendations have not yet been issued regarding this issue. We will share our recommendations with the Committee as soon as they are available.

HIGHWAY CONSTRUCTION WORK ZONES

Mr. CARR. With additional funding for highways and road construction and repair coming on line in the near future, safety at highway worksites is an important issue. A safety study by the NTSB indicated an increasing number of accidents and fatalities at highway construction sites during the 1980s. Your report recommended the development of a national safety program for highway construction work zones.

How many such fatalities occur each year?

[The information follows:]

According to the Fatal Accident Reporting System (FARS), a database on fatal highway accidents maintained by the National Highway Traffic Safety Administration, the number of fatalities that occurred in highway work zones increased from 596 in 1987 to 681 in 1990.

Mr. CARR. What would a national safety program consist of?

[The information follows:]

Because of the expected increase in work zone activity and current variation in state programs monitoring work zones, there is a need for national programs involving engineering, education, and law enforcement that uniformly address highway work zone safety. Although the Federal Highway Administration provides some guidance for work zones, the guidance focuses primarily on engineering aspects and does not address enforcement and public education issues.

Mr. CARR. What would be the respective roles of the Federal and States in such a national safety program?

[The information follows:]

The Federal government (through the Federal Highway Administration (FHWA)) should develop a national work zone safety program that integrates substantive enforcement, public information, and educational efforts. Once a program has been developed, the FHWA should make funding available to promote all aspects of the program. During the meantime, FHWA should make certain that States meet existing guidelines established for work zone safety in the Manual on Uniform Traffic Control Devices (MUTCD). Further, the States should develop individual programs to enhance compliance with existing MUTCD existing work zone safety features.

FIXED RAIL GUIDEWAY TRANSIT SYSTEMS

Mr. CARR. ISTEA provides the Secretary of Transportation with authority to withhold certain funds if a State does not have a safety program and safety agency for rail fixed guideway transit systems.

Has the DOT issued a rulemaking in this area and, if so, did the NTSB comment on it?

[The information follows:]

The Federal Transit Administration (FTA) published an Advanced Notice of Proposed Rulemaking (ANPR), "Rail Fixed Guideway Public Systems; State Safety Oversight," on June 25, 1992. The Safety Board supported this ANPRM in comments dated August 20, 1992.

However, the Board stated that it would oppose the use of American Public Transit Association audits as a substitute for state oversight, and urged that the rule not be limited to traditional light and heavy rail systems. The Board also noted that the use of the term "system safety program plan" to describe a state's safety program plan creates unnecessary confusion. The FTA should first evaluate the effectiveness of existing state oversight activities before attempting to define the safety plans each affected state must develop, which concurs with the part of Section 28 of the Intermodal Surface Transportation Efficiency Act that allows for the withholding of certain funds if the state is not making adequate efforts to comply with the statutory requirements.

A copy of the Board's August 20, 1992, comments follow.

National Transportation Safety Board

Washington, D.C. 20594

August 20, 1992



Office of the Chairman

Federal Transit Administration
 Office of Chief Counsel
 Docket No. 92-D; Docket Clerk, Room 9316
 400 7th Street, S.W.
 Washington, D.C. 20590

Dear Sir:

The National Transportation Safety Board has reviewed your Advance Notice of Proposed Rulemaking (ANPRM), "Rail Fixed Guideway Public Systems; State Safety Oversight," which was published in the Federal Register (Vol. 57, No. 123) on June 25, 1992. Section 28 of the Federal Transit Act, as amended, directs the Federal Transit Administration (FTA), to issue a rule requiring States to oversee the safety of rail fixed guideway public transportation systems not regulated by the Federal Railroad Administration. The ANPRM seeks comments on five broad areas of concern involved in the implementation of this requirement, including (1) the definition of rail fixed guideway systems, (2) the safety plans each affected State must develop, (3) existing State oversight practices, (4) the means by which State agencies conduct investigations of accidents and hazardous conditions, and (5) withholding of FTA funds for a State's noncompliance with the statutory requirements. Before addressing these areas of concern, the Board offers the following general comments.

On July 23, 1991, the Safety Board published a safety study, "Oversight of Rail Rapid Transit Safety." The Board concluded in that study, as it had more than a decade earlier, that primary responsibility for oversight of rail rapid transit safety properly resides with the State and local governments in which the transit systems operate. Thus, the Safety Board supports the intent of Section 28 of the Federal Transit Act and encourages the FTA to proceed in its rulemaking activity with that goal in mind.

Safety Board staff attended the last of the public hearings held in conjunction with the issuance of the ANPRM. Testimony given at this public hearing by transit system representatives encouraged the FTA to consider a transit system's participation in the American Public Transit Association's (APTA) rail safety audit program as evidence that the State has complied with the statutory requirements. As we have noted in previous correspondence with the FTA, the Safety Board has commended APTA for its efforts to conduct audits, and we believe that the results of APTA's audits can be an excellent source of information for State and local authorities in exercising their oversight responsibilities. The Safety Board does not believe, however, that APTA's audits, which are conducted on a property every 3 years, can be considered an adequate substitute for continual and effective State safety oversight. The Safety Board would oppose the use of APTA's audits as a substitute for State oversight under Section 28 of the Federal Transit Act.

With respect to the definition of a "rail fixed guideway transit system," the Safety Board has no accident investigation experience with people movers or incline plane systems that would provide a basis to determine if these systems should be covered by the FTA's proposed regulations. The Safety Board believes, however, that the safety of any system that regularly transports people should be monitored by an appropriate State or local agency. The Board encourages the FTA, therefore, not to limit the rule's applicability to traditional light and heavy rail systems.

Regarding the issue of safety program plans, the FTA points out that Section 28(b) provides that each affected State is to establish and implement a safety program plan for each rail fixed guideway system in the State. The Safety Board notes that the FTA is proposing a "system safety program plan (SSPP)" approach to this requirement and has suggested several ways in which the regulation could require the SSPPs to be developed, including the following: (1) the [FTA's] rule could specify in detail the content of a State's SSPP and the structure of the State's oversight agency; (2) a State could develop a safety oversight program based on broad guidelines provided by the FTA; or (3) the FTA could impose minimal standards or guidelines, allowing each State to develop its own SSPP consistent with the requirements of Section 28.

In the Safety Board's opinion, the use of the term "system safety program plan" in this section of the ANPRM to describe a State's safety program plan creates unnecessary confusion. All heavy rail transit systems currently operating in the United States have developed SSPPs in accordance with APTA's rail audit program. In essence, the FTA appears to be suggesting, as one alternative, that States develop detailed SSPPs to monitor the SSPPs developed by the individual transit systems. The Safety Board is concerned that unnecessary paperwork may be created in this approach with the end result being limited and ineffective onsite monitoring of operations. Indeed, each State or local agency should develop an internal document outlining the procedures for accomplishing its safety oversight function. However, the term "system safety program plan" may be inappropriate in this context.

More importantly, to specify in detail the content of a State's SSPP and the structure of the State's oversight agency appears to ignore and contradict what the FTA later acknowledges in the ANPRM--that several States currently oversee the safety of transit systems and that the mechanism for achieving this oversight necessarily varies from State to State. In its study previously mentioned, the Safety Board pointed out that in a State with a larger, older, and more complex system, a separate and independent agency, such as the New York State Public Transportation Safety Board, may be advisable. In a State with a smaller and newer system, a satisfactory mechanism for achieving oversight could be an independent contractor hired by a department of transportation or a public utilities commission. That is, the extent of oversight and the means by which the oversight is accomplished will depend on the fixed guideway system(s) in question. Further, as requested in the Safety Board's Safety Recommendation R-91-33 (issued August 6, 1991), the FTA should first evaluate the effectiveness of existing

State oversight activities before attempting to define the safety plans each affected State must develop.

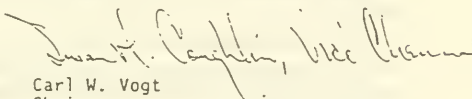
The Safety Board continues to believe that the FTA's role should be one of promulgating specific and detailed guidelines to be used by State or local agencies in exercising their oversight responsibility. The guidelines, also requested in Safety Recommendation R-91-33, should focus on activities that will highlight safety deficiencies in operations, such as reviews of maintenance and inspection records, accident investigations, audits of system safety program plans developed by the individual transit systems, reviews of the resources and activities of a transit system's safety department, reviews of training programs, monitoring of accident data, and unannounced, on site, and periodic inspections of equipment and infrastructure. The size, complexity, and age of a rail fixed guideway system will help determine which areas receive more emphasis than others. Those States with existing oversight activities should be able to determine, by comparing their activities to the guidelines, shortcomings in their programs.

Accident investigations to determine the cause of accidents and evaluations of hazardous conditions are important activities of an effective oversight program. To the extent practical, the investigations should be conducted independently of the transit system, although transit system personnel, manufacturers of transit system equipment, and labor union representatives should be invited by the oversight agency to participate in the investigations. The oversight agency in the State of New York should be an excellent source of information for establishing accident investigation activities.

The Safety Board addressed the issue of noncompliance with the statutory requirements and the withholding of funds in its special study, and the Safety Board concurs with the part of Section 28 that allows for the withholding of Section 9 funds if the State is not making adequate efforts to comply with the requirements. The Board stated in the study that it is the proper role of the FTA to ensure the implementation of effective safety oversight programs by State and local governments and that the FTA should use its funding authority to do so (Safety Recommendation R-91-35). If the FTA's monitoring of State and local programs indicates that the programs are not being effectively implemented, financial assistance could be withheld until the State or local authorities take the necessary corrective action.

The Safety Board appreciates the opportunity to comment on this ANPRM.

Sincerely,


Carl W. Vogt
Chairman

SAFETY OVERSIGHT FIXED RAIL GUIDEWAY TRANSIT SYSTEMS

Mr. CARR. You have recommended that the FTA monitor the safety oversight programs implemented by the States.

Why type of program should the FTA develop to provide for effective State oversight of transit safety?

[The information follows:]

The Safety Board has reviewed the Federal Transit Administration's (FTA) ANPRM issued to implement a provision in ISTEA requiring States to oversee the safety of rail transit system oversight which the Safety Board supports.

The Safety Board, in comments in response to FTA's ANPRM, stressed its belief that the FTA's role should be one of promulgating specific and detailed guidelines to be used by State or local agencies in exercising their oversight responsibility. The guidelines, as requested in Safety Recommendation R-91-33, should focus on activities that will highlight safety deficiencies in operations, such as reviews of maintenance and inspection records, accident investigations, audits of system safety program plans developed by the individual transit systems, reviews of the resources and activities of the transit system's safety department, reviews of training programs, monitoring of accident data, an unannounced, on site, and periodic inspections of equipment and infrastructure.

POSITIVE TRAIN SEPARATION

Mr. CARR. Positive train separation is on the NTSB's "Most Wanted" list. What progress is the Federal Rail Administration and the rail industry making on the development of advanced training control systems for the purpose of positive train separation?

[The information follows:]

At the April 16, 1993, Association of American Railroads Board Meeting, the advanced train control systems (ATCS) Steering Committee will present a long-term development and implementation plan/schedule for ATCS. The Federal Railroad Administration awaits the outcome of this presentation to determine how "Positive Train Separation" can be achieved at minimum cost and with a timetable of installation acceptable to government.

SUPERIOR, WISCONSIN, RAILROAD ACCIDENT

Mr. CARR. What is the status of your investigation into the June 30, 1992, derailment of a Burlington Northern train near Superior, Wisconsin in which the release of hazardous materials forced the evacuation of nearly 30,000 people?

What issues are you looking at and what have you learned thus far?

[The information follows:]

The fact-finding portion of the Superior, Wisconsin, accident investigation has been completed, and the accident investigation report is scheduled to be before the Board on April 27.

Safety issues that will be addressed in the report include the maintenance and inspection of track, the accident performance of tank cars, and the release of cargo from a tank car into the river and its consequences.

HAZARDOUS MATERIALS BY RAILROAD

Mr. CARR. The NTSB has cited the rail industry and the FRA for inadequate efforts to ensure the safe rail transportation of hazardous materials. Last year, you conducted an investigation which concluded that DOT requirements for periodic testing and inspection of rail tank cars are ineffective in detecting cracks and other defects that can lead to catastrophic failures.

Please discuss the magnitude of the problem you have identified and your recommended solutions.

[The information follows:]

On January 18, 1992, a DOT specification 112 tank car containing 30,700 gallons of liquefied propane, a flammable gas, fractured along a circumferential weld when the train began to move at Dragon, Mississippi and lost its entire load of propane. Metallurgical examination revealed a 21 inch long preexisting crack at the origin of the fracture that had extended almost completely through the tank shell before the catastrophic failure. By March 11, 1992, 8 similar tank cars had been inspected and 4 of those tank cars were found to have cracks ranging from 2 to 30 inches long in the same location as the one that failed. Therefore, on March 13, 1992, the Safety Board issued an urgent Safety Recommendation to the FRA to require the appropriate inspection of a representative sampling of other dual diameter tank cars for similar defects. The inspection of 108 tank cars of the same design identified that 40 tank cars had cracks in the same location. And, 25 of the 40 tank cars had been tested and inspected during or after 1988: 13 of the 40 tank cars had been tested and inspected during 1991 and 1992.

A second accident occurred on March 25, 1992, in Kettle Falls, Washington, and involved a different type of tank car, a DOT111A. The tank car was carrying its first load of cargo, concentrated sulfuric acid, after receiving its 10-year periodic test and inspection. As the train began to pull the tank car, a circumferential crack in the bottom of the tank car split open and spewed sulfuric acid. Metallurgical examination of the tank shell indicated that a preexisting fatigue crack 6 inches long extended half way through the tank shell. As the incident occurred the crack penetrated completely through the tank shell and grew to 34 and 1/2 inches long.

The Safety Board found that existing DOT requirements for periodic testing and inspection of tank cars depend on hydrostatic tests and visual inspections to detect structural defects. Hydrostatic testing was initially required as means of leak-testing the seams of riveted tank cars and appears to be an appropriate method to test the integrity of gaskets, seals, and other fittings on welded tank cars. However, hydrostatic tests conducted on 4 dual diameter tank cars with known structural defects (circumferential cracks) after the Dragon, Mississippi accident, demonstrated the ineffectiveness of hydrostatic tests as means of assessing the structural integrity of a welded tank car. All 4 tank cars, with structural cracks, passed the tests.

The Safety Board believes that nondestructive testing techniques, such as acoustics emissions, ultrasound, radiography, dye penetrants, and magnetic particle, should be evaluated to determine how such techniques can best be applied for periodic testing and inspection of all tank cars that carry hazardous materials. A damage-tolerance approach can then be used to (1) identify areas and components on tank cars that are prone to failure from high stress and fatigue, and (2) determine inspection intervals that are based on the defect size detectable by the inspection method used, the stress level, and the crack propagation characteristics of the structural component. This

type of approach can help to ensure the detection of cracks before they propagate to critical length, and therefore, appropriate safety recommendations were made to the FRA on this issue on December 31, 1992.

This affects all tank cars used to transport hazardous materials, an estimated 104,000 DOT specification tank cars.

FRA RESPONSES TO RECOMMENDATIONS

Mr. CARR. What actions have been taken by the FRA in response to your recommendations?

[The information follows:]

Following the Safety Board's urgent safety recommendation, issued on March 13, 1992, the FRA issued Emergency Order 16 on April 2, 1992. The Emergency Order required the owners of approximately 5,500 dual diameter tank cars to file proposed plans for the inspection and testing of their tank cars. The FRA required that the tank cars be given x-ray and/or ultrasonic tests at locations where cracks were found in other dual diameter tank cars.

As of March 22, 1993, a written response has not been received from the FRA to safety recommendations issued on December 31, 1992, calling for the evaluation of nondestructive testing techniques and requirements for the periodic testing and inspection of tank cars based on a damage-tolerance approach. However, oral communications from the FRA have been positive and the FRA has indicated that it will address the Board's concerns in a forthcoming notice of proposed rulemaking on tank car testing.

The Safety Board had also recommended that the Association of American Railroads, the Railway Progress Institute, and the Chlorine Institute assist the FRA in evaluating nondestructive testing techniques and in determining how such techniques can best be applied for periodic testing and inspection of tank cars that transport hazardous materials. On February 9, 1993, these organizations responded positively to the Board's safety recommendation. They agreed that nondestructive testing techniques hold great promise and established a special task force group to begin work with the FRA.

RAILROAD HAZARDOUS MATERIALS TANK CARS

Mr. CARR. What additional actions need to be taken by RSPA and the FRA to address your "Most Wanted" recommendations dealing with railroad hazardous materials tank cars?

[The information follows:]

"Improvements for hazardous materials tank cars" was placed on the Most Wanted list following the Board's investigation of an accident in Helena, Montana. In its evaluation of tank car performance and the hazards of products transported in those cars, the Board addressed numerous safety recommendations made in the past concerning specific tank car safety issues and products. In the Helena accident investigation, the Board urged the DOT to initiate a review of its safety standards for the transportation of hazardous materials in rail tank cars by applying safety analysis methods long advocated by the Board.

The Safety Board has recommended that the Department of Transportation (DOT) evaluate current safety standards for tank cars transporting hazardous materials by using safety analysis methods to identify the unacceptable levels of risk from the release of a hazardous material, and then modify existing regulations to achieve an acceptable level of safety for each product/tank car combination. The Secretary of Transportation agreed with the recommendation and the Federal Railroad Administration (FRA) has advised the Board that the initial phase of its study has been completed and is under review. The Board expects to see the results of FRA's initial review this summer.

The Safety Board would also like to see the DOT complete its work under Docket HM-175A. Of particular interest to the Board are issues in this docket concerning the use of full headshields instead of half headshields, the poor performance of aluminum tank cars in accidents without headshields and their use in transporting hazardous materials, and the need for headshields protection of DOT 105 tank cars under 18,500 gallons capacity when headshields are required for the same products in larger tank cars.

CAMDEN, SOUTH CAROLINA, RAILROAD ACCIDENT

Mr. CARR. Has NTSB completed its investigation of the Camden, South Carolina, Amtrak derailment? What has the Safety Board concluded in this investigation?

[The information follows:]

The investigation of this accident is completed, the report is presently being written, and it will be presented to the Safety Board this summer.

Until the Board acts, we are unable to provide the Committee with conclusions. We will furnish this information to the Committee when the matter is concluded.

TRACK SAFETY STANDARDS

Mr. CARR. What recommendations are being made to FRA concerning its enforcement of the track safety standards?

[The information follows:]

Although the Safety Board had issued safety recommendations to the Federal Railroad Administration regarding track inspections, we have not issued safety recommendations regarding the FRA's enforcement of track safety standards. This matter is being looked into in the Camden/Lugoff, South Carolina accident, and we will provide the Committee with that information when the Board completes action on the accident.

Mr. CARR. There was some question about the adequacy of Amtrak's emergency response to the accident. Why is it taking so long to determine the probable cause of the accident, and what have you learned thus far?

[The information follows:]

As in most accidents, there are safety lessons to be learned. In the Camden/Lugoff, South Carolina, accident there were passenger complaints that the train's personnel did not use the on-board public address system to request help from medical practitioners, inform passengers of the accident or give passengers directions.

As a result of that accident, the Safety Board is evaluating whether changes to procedures are needed in the areas of on-board communications between the crew and passengers, refresher emergency training and first aid training.

The investigation of the Camden/Lugoff accident has taken longer than expected due to a rash of eight major accidents which took place in less than one year.

AMTRAK TRAINING AND MANAGEMENT OVERSIGHT

Mr. CARR. Last year, the Safety Board indicated that a common theme underscoring several Amtrak accidents in recent years has been one related to human performance.

What improvements has Amtrak made in focusing more on training and management oversight of its people and operating crews and what additional steps would you recommend?

[The information follows:]

Amtrak is approximately half way into a major review of its locomotive engineer training program. A task force consisting of Amtrak officials, including its Human Resources Development Manager, and members of the Brotherhood of Locomotive Engineers is undertaking the review. The task force expects to complete work in July 1993.

The Safety Board expects the final report to address the adequacy of Amtrak's training programs as a whole, as well as the final qualification procedures for locomotive engineers.

Amtrak's criteria for selecting instructor engineers appears to have been conceived adequately and a one-day orientation class is required for these employees. The class is administratively oriented, however, and not intended to teach instructors how to instruct and/or evaluate student engineers, as the Safety Board has recommended. These issues were the subjects of Safety Board recommendations R-92-2, R-932-3, and R-92-4.

EXCESS FLOW VALVES

Mr. CARR. Last year, the Safety Board testified that the second most important action RSPA could take to improve hazardous materials and pipeline safety would be to issue rulemaking on excess

flow valves and to improve its management of its regulatory and oversight responsibilities.

To what extent do you believe RSPA is making progress on this front?

[The information follows:]

Through the continual efforts of the Safety Board and the enactment of the Natural Gas Pipeline Safety Act of 1992, the Research and Special Programs Administration (RSPA) now plans to issue a Notice of Proposed Rulemaking on excess flow valves during calendar year 1993. The Safety Board is pleased with these actions, and hopes that RSPA will expeditiously issue this important final rulemaking by assigning a high priority to the rule.

Mr. CARR. The most important action the Safety Board recommended for RSPA last year was to require the installation of pipeline excess flow valves—a recommendation still on your “Most Wanted” list of safety improvements. RSPA has issued a notice of proposed rulemaking on excess flow valves.

Did NTSB comment on the proposed rule?

[The information follows:]

Since December 20, 1990, when the Research and Special Programs Administration (RSPA) issued its Advance Notice of Proposed Rulemaking, Docket No. PS-118, Notice 1, there has been no additional rulemaking notice on this subject. The Safety Board staff understands that a draft Notice of Proposed Rulemaking (NPRM) is in the final internal review. The NPRM is expected to propose the installation of excess flow valves on certain gas lines. When the NPRM is issued, the Safety Board will comment on the rule.

Mr. CARR. Do you see any problems with DOT's implementation of this requirement and/or with the gas distribution companies' compliance with the requirement and resulting regulations?

[The information follows:]

The Safety Board believes that Congress has provided adequate flexibility for the Research and Special Programs Administration (RSPA). The Safety Board anticipates minimal change to the pipeline industry's construction process as a result of the rules that RSPA is developing. Many companies are now using these valves and have not expressed problems with their use.

Mr. CARR. Since this item has been on NTSB's “Most Wanted” list, will you continue to monitor DOT's and the gas industry's efforts to implement and carry out this requirement?

[The information follows:]

Yes. The Safety Board will continue to monitor DOT's and the gas industry's efforts to implement excess flow valve requirements. Currently the Safety Board is working with the Gas Piping Standard Committee to publish guidance applicable to the industry and the use of excess flow valves. The Committee is also developing information to help operators in selecting and using excess flow valves appropriate for their operating conditions.

ACCIDENT INVESTIGATION CRITERIA

Mr. CARR. What are the NTSB's criteria for investigating accidents in each of the transportation modes, that is, aviation, highway, railroad, et cetera?

[The information follows:]

The Board investigates aviation, railroad, highway, marine, pipeline, and hazardous materials accidents. Under its accident selection criteria, the Board's investigative response will depend primarily on the following factors: 1) the need for independent investigative oversight of certain specified areas to ensure public confidence in the transportation system; 2) the need to concentrate attention and resources on the most significant and life-threatening safety issues; and 3) the need to maintain an adequate data base on which trends can be identified and projected.

Aviation

1. Oversight/public confidence:

- a. All Part 121 and 135 accidents (includes: commercial passenger service, newly-formed airlines, FAA surveillance of air carrier operations and maintenance activities, and Part 135 operators with multiple accident histories).
- b. Foreign aircraft accidents involving U.S. airlines; U.S.-manufactured transport aircraft; or major U.S.-manufactured components (e.g., engines) on transport aircraft.
- c. Accidents involving air traffic control.
- d. Accidents involving flight training or crew experience as potential factors.
- e. Midair collision accidents.
- f. Accidents involving newly-certificated aircraft (first accident or less than 10 years old).
- g. Accidents involving newly-certificated engines.
- h. Accidents involving in-flight fire.
- i. Accidents involving in-flight breakup.
- j. Accidents that expose the public to high risk, involve substantial property damage, or attract high public interest.

2. Selected emphasis areas:

- a. General aviation accidents with elements common to Part 121/135 operations (e.g., aircraft typically used in Part 121/135 operations; Part 121/135 training flights, etc.).
- b. All fatal general aviation accidents.*
- c. Commercial passenger flight incidents with safety improvement potential.

* The Safety Board, through a letter of agreement with the FAA, delegates the investigation of all agricultural, home-built, and experimental category aircraft accidents to the FAA. However, for those cases in which the FAA does not accept a delegated accident, the Safety Board

- d. Air traffic control incidents with safety improvement potential.
 - e. Aging transport aircraft accidents.
3. Statistical needs: All general aviation accidents, except those delegated to the FAA per the letter of agreement.

Railroad

- 1. Oversight/public confidence:
 - a. Commercial passenger services, including rail rapid transit accidents, which result in:
 - a passenger fatality or serious injury to two or more persons;
 - an onboard fire with evacuation of passengers;
 - property damage of \$50,000 or more; or
 - collisions with on-track equipment.
 - b. All accidents which involve an employee fatality or serious injury to two or more persons or result in damage of \$500,000 or more to railroad and non-railroad property.
- 2. Selected emphasis areas:
 - a. Alcohol/drug use by railroad operating employees.
 - b. Railroad/highway grade crossing accidents which involve commercial vehicles, or school or public transportation vehicles.
 - c. Release of hazardous materials.
 - d. Advanced train control.
 - e. Locomotive crashworthiness.
 - f. Air brake reliability.
 - g. Fatigue and hours of service.
 - h. Rapid transit oversight.
 - i. Continuous welded rail.

Highway

- 1. Oversight/public confidence:
 - a. Highway bridge safety (structurally deficient and functionally obsolete bridges.)
 - b. Motor carrier oversight by Federal and State agencies.
 - c. Transportation of school children.
 - d. Intercity bus safety.
- 2. Selected emphasis areas:
 - a. Adequacy of passive restraints.
 - b. Air brake performance of heavy trucks.
 - c. Training and licensing of intercity bus drivers.
 - d. Highway/Railroad grade crossing accidents involving commercial, school, or public transportation vehicles.

- e. Limited visibility accidents.
- f. Driver fatigue in commercial vehicle accidents.
- g. Elderly driver safety.

Marine

1. Oversight/public confidence:

- a. Loss of six or more lives.
- b. Loss of a self-propelled vessel of over 100 gross tons or damage to any vessel exceeding \$500,000.
- c. Serious hazardous materials threat to life, property, and environment.
- d. Coast Guard safety functions (e.g., Vessel Traffic Services, search and rescue operations, vessel inspections, aid to navigation positioning/lighting, etc.)
- e. A public and non-public vessel collision or other accident with one or more fatalities or \$75,000 or more in property damage.

2. Selected emphasis areas:

- a. Large passenger vessels including ocean cruise ships and excursion vessels, ferries, and harbor excursion boats.
- b. Small passenger vessels carrying more than six passengers.
- c. Liftboats.
- d. Tankships and tank barges.
- e. Fatigue and hours of service on all vessels.
- f. Bridge Resource Management.
- g. Ship maneuvering capabilities in restricted waters.
- h. Collisions and groundings involving oceangoing vessels.

Pipeline

1. Oversight/public confidence:

- a. One or more fatalities.
- b. Damage exceeding \$500,000.
- c. Extensive release of highly volatile liquids.

2. Selected emphasis areas:

- a. Accidents where consequences could have been reduced by use of an excess flow valve.
- b. Failure of aging pipe systems.
- c. Accidents involving human performance issues.
- d. Accidents involving recognition or response delays.
- e. Major environmental damages resulting from product release.

Hazardous Materials

1. Oversight/public confidence:

- a. Fatalities or serious injuries by the release of hazardous materials.
- b. Major evacuations of the public or major disruptions to a community's normal functioning due to the threats caused by a release of hazardous materials.

2. Selected emphasis areas:

- a. Non-collision container failures.
- b. Failure of containers under accident conditions in which the containers reasonably should have been expected to survive.
- c. Cargo transfer operations.
- d. Unusual or unexpected behavior of hazardous materials.
- e. Mis-identified or non-identified hazardous materials.
- f. Emergency response difficulties because of the unexpected behavior of hazardous materials involved in an accident or the lack of adequate information about cargo or containers involved in an accident.

INVESTIGATOR STAFFING

Mr. CARR. How many safety inspectors do you have assigned to each of these areas? Is this staffing sufficient, considering the number of accidents that occur in these areas?

[The information follows:]

The Safety Board currently has a staff level of 95 safety investigators. This includes: Aviation (60), Railroad (11), Highway (15), Marine (5), Pipeline (2), and Hazardous Materials (2). This excludes any technical support specialists including flight data recorder and survival factor specialists. This number is sufficient as a minimum level. The Safety Board is concerned that its efforts to rebuild from the staffing cuts in the early 1980s not be impeded.

"MOST WANTED" SAFETY ISSUES

Mr. CARR. What do you consider to be the most critical of those recommendations on your "Most Wanted" list?

[The information follows:]

When the Safety Board adopted its "Most Wanted" list of safety issues in the Fall of 1990, there was concern expressed by the Members that in listing any portion of all the open safety recommendations issued by the Board, any safety recommendations left off of the list would be looked upon as less than important. It was agreed that this problem could be surmounted if proper attention were paid to the other recommendations while highlighting and giving higher attention to those on the "Most Wanted" list. It was also agreed at that time that no further designation or ranking of the recommendations on the list would be undertaken. For that reason, the Board lists the issue areas in chronological order.

Mr. CARR. What progress has been made in recent years in removing items off the "Most Wanted" list, and how often is the "Most Wanted" list updated?

[The information follows:]

Since the adoption of the "Most Wanted" list of safety issues in October 1990, two issue areas have been removed from the list. They are: Identification of pilots (aviation) with substance abuse problems; and requirements for Ground Proximity Warning Systems in aircraft certificated for commuter operations.

The "Most Wanted" list is reviewed by the Board twice each year, at which time issues are removed or added to the list.

ACCEPTANCE RATE OF RECOMMENDATIONS

Mr. CARR. Has there been any increase in the acceptance rate for your recommendations?

[The information follows:]

The 2 tables below show the changes in acceptance rates for the last 6 calendar years. Table 1 compares the various modes of transportation, and Table 2 compares the modal administrations within the Department of Transportation.

Comparison of Acceptance Rates for Last 6 Calendar Years by Mode

Year	1988	1989	1990	1991	1992	1993
Mode						
Aviation	82.1%	81.6%	82.1%	82.9%	83.1%	83.1%
Highway	87.1%	86.8%	87.2%	88.1%	88.3%	88.4%
Intermodal	86.3%	87.2%	85.2%	81.6%	83.0%	81.9%
Marine	71.0%	74.3%	73.7%	73.1%	73.9%	74.9%
Pipeline	86.7%	86.4%	86.2%	87.0%	87.0%	87.1%
Railroad	77.5%	77.0%	78.5%	78.8%	79.3%	79.1%
Overall	80.5%	80.9%	81.2%	81.5%	81.9%	82.1%

Comparison of Acceptance Rates for Last 6 Calendar Years by Modal Administration

Year	1988	1989	1990	1991	1992	1993
Administration						
Office of the Secretary	82%	89.3%	91.0%	86.6%	86.9%	86.9%
Aviation	78%	80.5%	81.5%	82.2%	82.5%	82.4%
Highway	84%	87.1%	87.6%	87.8%	87.9%	88.2%
Highway Traffic Safety	72%	78.8%	79.1%	84.1%	86.5%	85.1%
Railroad	65%	72.0%	73.5%	73.2%	74.0%	72.1%
Research & Special Programs	73%	74.4%	73.6%	78.2%	81.1%	80.2%
Transit	65%	78.4%	77.6%	75.6%	79.6%	79.6%
Coast Guard	72%	74.6%	73.1%	73.1%	73.3%	75.8%
Maritime	100%	100%	100%	100%	100%	100%
Overall	76%	79.8%	79.9%	80.4%	80.8%	81.1%

COST BENEFIT ANALYSES

Mr. CARR. The Subcommittee heard last week at a hearing on the state of the airline industry from the Air Transport Association. The ATA complained about the "ever increasing tendency on the part of the Government to impose more and more costs on the airline industry through ill-conceived regulations." The ATA spoke to the need for rigorous cost/benefit regulatory analyses.

To what extent do you consider cost considerations in making your safety recommendations?

[The information follows:]

The Safety Board takes cost considerations into account in making its safety recommendations in several ways. First, the Board applies a general test of "reasonableness" in considering the economic impact of its recommendations. We recognize, for example, that while the ultimate solution to railroad-highway grade crossing accidents is to eliminate all grade crossings, this solution is not economically feasible. Second, the Board often relies on the cost analyses developed by other agencies and industry groups in relation to the problem being addressed. Finally, many of the Board's recommendations which potentially involve substantial costs are recommended only following further study by the recommendation recipient and with the involvement and comment of affected segments of the industry and the public.

Mr. CARR. Do you see any benefit to Congress requiring the Safety Board to conduct cost/benefit analyses of its recommendations?

[The information follows:]

No, we do not believe there would be any benefit from the Congress requiring the Safety Board to conduct cost/benefit analyses of its recommendations. The Department of Transportation, to which most of our recommendations are directed, is already required to conduct cost/benefit analyses prior to proposing regulations in the transportation modes. To require the Safety Board to do so also, would be an unnecessary and costly duplication of effort.

Mr. CARR. Do you have an opinion on the rigor of the FAA's economic analyses of your regulatory recommendations?

[The information follows:]

While the Safety Board tries to maintain a balance between economic practicality and safety when making recommendations, it is not staffed or able to conduct a cost benefit study, thus the Safety Board leans on the side of safety. By law, however, OMB and DOT are required to conduct an economic analysis and consider cost benefit in the issuance of a new regulation. There are few examples where the cost benefit analysis has resulted in the delay or shelving of safety essential rulemaking, and this is evident in the excellent acceptance record of the Safety Board's recommendations.

QUALITY AND TIMELINESS OF REPORTS

Mr. CARR. Some of your accident investigations take as long as 2 years to complete, even though you have added 46 investigative and technical support positions over the past few years, according to last year's testimony.

Are you satisfied with the quality and the timeliness of your reports?

[The information follows:]

Although we are satisfied with the quality, the Safety Board is not satisfied with the timeliness of its accidents reports. Timeliness is an area we have been emphasizing, improving from an average of 14.1 months in 1989 to the 1992 average of 9.3 months. The Marine Division has had the poorest record, 19.8 months for 1992. This Division was recently reorganized and we should be seeing better results.

Some accidents, however, will offer such significant technical challenges that time-consuming efforts such as weather-modelling, computer re-enactment of flight

paths, and extensive simulation will be necessary. The credibility of the result matters more than the timeliness of the report; however, timeliness is a high priority.

RETAINING NTSB STAFF

Mr. CARR. In the past, the Safety Board has had problems retaining experienced investigators and in hiring investigators with sufficient experience and training, particularly aviation investigators.

Has that situation turned around?

[The information follows:]

Yes, we believe we have increasingly been able to hire and retain highly qualified and experienced investigators in all modes of transportation. This is so in part because of the economic conditions in the country (and particularly in the aviation industry), but also in part because of the improved incentives that we are able to offer in government (e.g. locality pay adjustments for high cost geographic areas, retention bonuses, etc.). Further, we have undertaken an aggressive recruitment program, have placed greater emphasis on intake of recent college graduates through cooperative education programs offered to our investigative staff, and have made the job of the investigator more attractive through providing state-of-the-art computer and other technical investigative tools.

BUREAU OF TRANSPORTATION STATISTICS

Mr. CARR. The ISTE of 1991 established a Bureau of Transportation Statistics and authorized an advisory council on transportation statistics. Has the Department of Transportation consulted or coordinated with NTSB in planning for the new bureau and in determining the types of statistics that will be collected, compiled, analyzed, and published?

[The information follows:]

The Safety Board has been represented on the Federal Intergency Transportation Statistics Committee by Dr. Bernard Loeb and Dr. Vernon Ellingstad since that body was established two years ago. This committee has been kept informed of progress in the development of the Bureau of Transportation Statistics and has been active in its discussions of appropriate statistical assessments of transportation system performance and capacity.

STATISTICAL DATA

Mr. CARR. What types of statistics would be of most use to you?

[The information follows:]

The Safety Board has a particular interest in measures of the rates of use and exposure to risk in all modes of transportation. We depend on these exposure measures to develop estimates of accident rates (e.g., commercial air transport accidents per 100,000 departures flown, etc.). Current exposure and rates of use data are extremely limited in all of the transportation modes, and we look forward to improvements as a result of the efforts of the Bureau of Transportation Statistics.

Mr. CARR. Could any of NTSB's current data collection and analysis efforts be assumed by the new bureau?

[The information follows:]

The Safety Board's data collection activities are limited to accident investigation and thus do not overlap with the data collection responsibilities of the Bureau of Transportation Statistics. The Bureau, in turn, will not collect primary accident data. We regard the functions of the Safety Board and the Bureau of Transportation Statistics to be complementary but not redundant.

BAC LEVEL—HIGHWAY

Mr. CARR. The Department of Transportation has recommended that States adopt a threshold of 0.08 percent blood alcohol concen-

tration as the legal measure of drunken driving for adults, as compared to the 0.10 level used by most States.

Do you support the lower threshold and what do you believe the safety impacts will be?

[The information follows:]

The Board has not taken a position on the lowering of the BAC threshold from .10 in most States to .08 which some states are adopting. We have, however, provided information to various states in their efforts to enact laws reducing the BAC to .08.

AVIATION DEREGULATION

Mr. CARR. The year of 1992 appeared to be a good safety year for commercial aviation in that the number of persons killed in accidents involving large scheduled commercial carriers dropped to its lowest level since 1986. However, some observers of the aviation industry believe that increased airline competition in the deregulated marketplace tempts airlines to skimp on maintenance, use older aircraft, and engage in other practices that may negatively impact safety. Of course, we now have an environment of intense competition in an industry that is financially depressed with several carriers now flying under Chapter 11 protection.

What is your view of the impact of deregulation on airline safety?

[The information follows:]

The Safety Board has seen no evidence that economic deregulation has resulted in a decrease in air carrier safety. We believe that there can be economic deregulation without derogation of safety, provided the Federal Aviation Administration (FAA) is vigilant in the enforcement of its regulations. In this regard, our safety recommendations to the FAA over the years reflect a continuing concern that the FAA must maintain—and even heighten—this vigilance if the Nation's enviable aviation safety record is to continue to improve.

Deregulation has resulted in a major change in the aviation operating environment, and it has had the effect of upheaval in the industry, including bankruptcies, mergers, and new acquisitions. Thus it is incumbent on all of us in the aviation community—the FAA, the industry, the NTSB, the Congress—to continue our vigilance.

AVIATION AND ALCOHOL

Mr. CARR. Along with traffic accidents, alcohol continues to be a contributing factor in aviation accidents as well. You recently completed a safety study reviewing alcohol and other drug involvement in fatal general aviation accidents from 1983 to 1988.

What did you learn in this study? Are drugs and alcohol playing a more or less significant role in aviation accidents?

[The information follows:]

Although the Safety Board is encouraged by the downward trend of alcohol use in fatal general aviation accidents, we remain concerned about even the current level of alcohol use because of alcohol's adverse effect on pilot performance.

During the 1983 through 1988 period, there was a downward trend in general aviation accidents, including alcohol-involved general aviation accidents fatal to the pilot. Further, the data show that the percent of conclusive toxicological tests that were alcohol positive for fatally injured general aviation pilots decreased from about 10 percent (corresponding to about 47 accidents per year) in the mid-1970's to about 6 percent (about 17 accidents per year) in the late 1980s.

However, data on the general aviation pilots fatally injured in alcohol-involved accidents show evidence of high blood alcohol concentrations (BAC). The mean BAC of the alcohol-positive pilots was 0.15 percent, nearly four times the 0.04 percent BAC offense level established by current Federal Aviation Regulations. The data also

show evidence of certificate violations (pertaining to biennial flight review, medical certificates, and airman certificates), and flying experience.

Tests for drugs other than alcohol in fatal general aviation accidents were not sufficiently frequent during the 1983 through 1988 period to support any conclusions regarding drug involvement in general aviation accidents. There were a total of 35 drug-involved fatal-to-the-pilot general aviation accidents identified during the period 1983 through 1988.

BAC LEVEL—AVIATION

Mr. CARR. Do you continue to support a zero blood alcohol tolerance level of airline pilots?

[The information follows:]

The Safety Board continues to support a zero blood alcohol tolerance level for airline pilots. The study of fatally injured general aviation pilots found that more than 47 percent of the alcohol-positive pilots had a BAC that exceeded 0.15-percent, the level that is strongly associated with problem drinking. Using a conservative estimate of metabolic rates of alcohol (0.015 percent BAC per hour), it would take nearly 8 hours to reduce the mean 0.15-percent BAC level found in the alcohol-involved pilots in this study to the 0.04-percent level established as a BAC offense in the current FAA regulations.

Although Federal Aviation Administration (FAA) regulations prohibit acting or attempting to act as a flight crewmember under the influence of alcohol or other drugs and within 8 hours of consuming any alcoholic beverage, current regulations also prohibit flying with a BAC at or above 0.04 percent. The regulations may lead some pilots to believe that some alcohol consumption is acceptable. The Safety Board believes that there is adequate evidence of impairment at BAC levels below 0.04 percent. The Board previously recommended that the FAA eliminate the mixed message on "allowable blood alcohol concentrations" by reducing the BAC offense level to the lowest possible level consistent with the capability of testing equipment to measure any ingested alcohol (Safety Recommendation A-84-45, issued May 1, 1984). The recommendation was classified as "Closed-Unacceptable Action" on September 16, 1985, after the FAA modified Part 91 and established 0.04 percent BAC as the level at or beyond which an FAA violation occurs. The Safety Board continues to believe that pilot performance can be impaired at blood alcohol levels below 0.04 percent and that the FAA regulations should prohibit acting or attempting to act as a crewmember when the individual has a BAC above zero.

AVIATION AND ALCOHOL

Mr. CARR. What actions were recommended as a result of this safety study to the FAA for follow-up and what has been its response?

[The information follows:]

The Safety Board issued four safety recommendations to the Federal Aviation Administration (FAA) as a result of the study on alcohol and other drug involvement in fatal general aviation accidents. Those safety recommendations were:

Establish procedure for receiving, processing, and analyzing toxicological test results reported by the States, including the designation of appropriate Federal Aviation Administration (FAA) field offices (such as the Flight Standards District Offices or other appropriate FAA offices) to which States are to report toxicological test results and refusals to submit to testing, and the designation of one office within the FAA to which the FAA field offices transfer the test results for analysis. (A-92-107)

Distribute, in conjunction with the National Association of State Aviation Officials, to State aviation authorities and law enforcement agencies the procedures for States to follow when notifying the Federal Aviation Administration of toxicological test results and refusals to submit to testing. (A-92-108)

Amend 14 CFR 91.17 to require crewmembers to submit to a toxicological test for drugs when, under authorization of State or local laws, a test is requested by a law enforcement officer. (A-91-109)

With the assistance of the Aircraft Owners and Pilots Association, the Experimental Aircraft Association, the National Air Transportation Association, the National Agricultural Aviation Association, the National Association of Flight Instructors, and the National Association of State Aviation Officials, develop and disseminate, as appropriate, any new educational and informational materials that may be needed on (a) the effects of alcohol and other drugs on flying and in general aviation accidents, and (b) procedures or actions that will encourage pilots, fixed-base operator personnel, flight instructors, Flight Standards District Office personnel, aviation safety specialists, and family and friends of pilots to intervene when a general aviation pilot attempts to fly after consuming alcohol or using other drugs. (A-92-110)

The FAA responded to these safety recommendations on March 9, 1993. Although the response is still being analyzed, it appears that the FAA has agreed to implement each of the four recommendations addressed to them.

FAA USE OF THE NATIONAL DRIVER REGISTER

Mr. CARR. Do you know what success the FAA has had in using the National Driver Register to identify pilots whose driving licenses have been suspended or revoked for alcohol-related offenses?

[The information follows:]

In November 1990, the Federal Aviation Administration (FAA) began a program to screen applications for medical certificates using the data on DWI offenses recorded in the National Driver Register (NDR). According to FAA personnel, about 3 percent of the applicants for FAA medical certificates have alcohol-related offenses in the NDR. FAA personnel indicate that from July 5, 1991, through July 31, 1992, they received and screened 463,391 applications for medical certificates. The NDR records identified 14,125 possible matches (or 3.05 percent of the applications). Of these possible matches, 779 pilots (or 5.5 percent of the NDR matches) were referred to the FAA Chief Counsel for possible airman certificate suspension or revocation action.

AVIATION AND ALCOHOL—INADEQUATE STATE LAWS

Mr. CARR. Your safety study indicated that very little information regarding alcohol or other drugs as a factor in nonfatal accidents is available due to inadequate State laws pertaining to alcohol and drug use in aviation.

Would you elaborate on what laws you believe are needed?

[The information follows:]

The number of toxicological tests performed after nonfatal accidents is very small; about 1.0 percent of the 13,677 accidents that occurred from 1983 through 1988 involved a toxicological test. The low rate of testing pilots involved in nonfatal general aviation accidents is the result of the absence of an implied consent provision (requiring a pilot to submit to toxicological testing) in many existing State laws, and the absence of flying while intoxicated (FWI) laws in some States.

Under most State laws, an officer may not request a test unless an offense has been committed in the presence of the officer or the officer has cause to believe (based on the odor of alcohol on the pilot or other evidence at an accident) that an offense has been committed. The authority to request such a test is dependent on the existence of a State law pertaining to flying while intoxicated.

Although 44 States have some form of law related to flying while intoxicated, the provisions of the laws vary from State to State. Only 16 states with FWI laws have an implied consent provision (for chemical testing) and establish a BAC at which a pilot is presumed to be impaired. Fifteen of the 16 States with an FWI law require reporting of test results to the FAA.

The Safety Board believes that a comprehensive law should include: (a) an implied consent provision to obtain biological specimen(s) for toxicological testing, (b) definition of the specimen(s) that may be obtained—such as breath, blood, urine, and/or other bodily substance, (c) a blood alcohol concentration that defines the offense, and (d) a requirement to report to the FAA toxicological test results and refusals to submit to testing.

Mr. CARR. What should the Federal Government be doing to encourage States to enact more comprehensive laws regarding alcohol and drug abuse in aviation?

[The information follows:]

The States generally have been receptive to the Safety Board's recommendations regarding more comprehensive laws. Already this year, legislation of this type has been introduced in at least five states, and enacted in one (Utah). We expect many other states to review their laws and make revisions as appropriate.

The most important step that the Federal Government can take is to strengthen regulations so that they can serve as a model for the states. In particular:

Rewrite the implied consent provisions to include tests for alcohol and other types of drugs.

Give state law enforcement officers implied consent authority to test for all drugs under the Federal rules so that these officers are not dependent solely upon state law for their authority.

Recognize and penalize in the Federal regulations a pilot's refusal to submit to an appropriate test for drugs other than alcohol. Currently, if a pilot refuses a state law enforcement officer's request to submit to a drug test, there is no penalty imposed upon him by the Federal rules.

Adopt a zero blood alcohol concentration limit for pilots. States are not likely to adopt a limit below the current Federal 0.04 percent standard until it is reduced to zero.

Additionally, the Federal Government must actively promote revisions to state laws. State legislators do not often deal with aviation issues, and therefore often are not aware of the weaknesses in their law. Once informed they generally are quite receptive to the recommended changes.

The Safety Board has been providing information to state legislators and other groups regarding its recommendations and the need for improvements. The Federal Aviation Administration also should become involved in this effort. In part, this should include providing information about the effects of alcohol and other drugs, and about the Federal regulations.

FAA'S SAFETY INSPECTION PROGRAM

Mr. CARR. Both the GAO and the DOT Inspector General have issued reports highly critical of the FAA's safety inspection program. Are you satisfied with the FAA's oversight of aviation safety practices?

[The information follows:]

The Safety Board has been critical of the Federal Aviation Administration's (FAA) safety inspection program in the context of some post-accident investigations. One aspect has been the level of followup given to the correction of specific findings of the National Inspection Program teams after their visit to an air carrier. Another has been the qualification and workload distribution of the FAA field inspector staff, particularly regarding the surveillance of the commuter and on-demand operators. Since 1968, the Board has issued more than 25 safety recommendations to the FAA on this subject. Most of the recommendations have been closed and classified as acceptable by the Board based on subsequent actions by the FAA.

The Board has not conducted a more general overview of the FAA surveillance programs as did the General Accounting Office and the Department of Transportation's Inspector General. However, our findings support some of the conclusions reached by those organizations.

AVIATION RECOMMENDATIONS

Mr. CARR. What are the three highest priority aviation safety recommendations that you have made to the FAA that remain in open status?

[The information follows:]

While there are many safety recommendations being held in an open status—most address specific issues for which the Federal Aviation Administration (FAA) actions are underway, but not yet completed. The three issues that could have the greatest safety impact are those on our "most wanted list" addressing the problems of runway incursions, collision avoidance in the terminal area and the braking performance certification of transport category airplanes.

The Safety Board is satisfied that the FAA has a comprehensive program to address the continuing problem of runway incursions. However, the Board believes that the risk of a ground collision at busy airports will remain unacceptably high until a system of surveillance and collision alerting such as provided by the ASDE3 radar and AMASS is installed at those airports. The Board is following the development and testing of these equipment with interest.

The Safety Board has been urging that the FAA incorporate the Mode C Intruder conflict alert in the terminal areas since 1987. This system would alert the Terminal Radar Controller to a pending collision conflict between a tracked airplane and an airplane operating under visual flight rules. The FAA stated in August 1988 that the equipment would be installed at the first site in the third quarter of 1991 and

installation at all ARTS III sites would be completed by the second quarter of 1993. However, subsequent delays in the FAA program have caused the installation schedule to slip about 2 years.

The Safety Board's primary concern about airplane braking performance stemmed from an accident in which an airplane was not able to stop on the runway after 8 of its 10 wheel brakes failed as a result of their worn condition, even though all of the brakes met takeoff wear limit requirements. Since that accident, the FAA reevaluated brake wear limits and implemented changes affecting nearly all models of transport aircraft. However, the Safety Board also noted in a study of rejected takeoff accidents, that the accelerate-stop and takeoff runway length requirements for transport airplanes did not provide realistic safety margins. The existing rules do not account for variables such as the distance used for takeoff runway alignment, the degradation in stopping performance due to brake wear, and the actual reaction times of line pilots in applying deceleration devices. The FAA had issued a notice of proposed rulemaking addressing the issue, but it is the Board's understanding that the final rulemaking has been put aside as a result of cost benefit analysis. The Safety Board believes that this issue merits further discussion.

BOGUS AIRCRAFT PARTS

Mr. CARR. Over the past year, the DOT Inspector General has had the detection and elimination of unapproved bogus parts in transportation systems, especially aircraft, as her number one investigative priority. Last year, the Safety Board testified that it had never established so-called bogus parts as a probable cause of an accident.

Is that still the case?

[The information follows:]

The Safety Board has not identified the use of an unapproved part or a counterfeit (bogus) part as a cause in any air carrier accident. The Safety Board has, however, cited the use of unapproved parts as a causal factor in general aviation accidents. Typically, this involves the use of automobile parts or hardware available from a local hardware store substituted for the more expensive approved aircraft part. The cause of these accidents is attributed to improper maintenance.

We are aware of the Department of Transportation Inspector General's efforts to identify the manufacturers of parts that are purported to be approved, but for which no manufacturer's approval has been issued. While such parts have not been the cause of an accident, the potential safety hazard warrants concern.

Mr. CARR. Do you believe that the IG's emphasis on unapproved aircraft parts is warranted? Could some of these resources be better utilized on other issues?

[The information follows:]

The Safety Board has not identified the use of an unapproved part or counterfeit (bogus) part as a cause in any major air carrier accident. However, we are aware of the Department of Transportation Inspector General's efforts to identify the manufacturers of parts that are purported to be approved, but for which no manufacturer's approval has been issued. While such parts have not been the cause of an accident, the potential safety hazard warrants concern. The Safety Board has cited use of unapproved parts as the cause or a causal factor in general aviation accidents. Typically, this involves the use of automotive parts or hardware available from a local hardware store substituted for the more expensive approved aircraft part. The cause of these accidents is attributed to improper maintenance.

AIRBUS ACCIDENTS

Mr. CARR. Several recent aircraft accidents have raised questions about FAA certification and regulatory activities. FAA uses designated representatives employed by manufacturers to conduct many of these activities. In 1980, the National Academy of Sciences raised concerns about FAA's ability to oversee designee activities.

In January 1992, an Airbus A320 crashed in France. This was the third fatal A320 crash since it was introduced into service in 1988.

Have these accidents been design related?

If so, what steps should be taken to ensure the safety of those A320 aircraft now in service in the United States?

[The information follows:]

The Bureau Enquetes-Accidents is currently investigating the accident involving the Air Inter A320 that crashed near Strasbourg, France, in late January 1991. The Safety Board has been in regular contact with its French counterpart concerning the investigation of this accident, and it looks forward to receiving the results of the French investigation.

Because the circumstances of the three accidents appear to be rather different, the Safety Board is not confident about drawing parallels among them. For example, the first accident of an A320 occurred during an airshow over Habsheim-Mulhouse, France, in 1988, while the second accident, which occurred near Bangalore, India, in 1990, was a training flight being conducted in scheduled, revenue passenger service.

Until the report on the Strasbourg accident is released, the Safety Board is reluctant to conclude that changes may be needed in the design of this aircraft.

FAA AIRCRAFT CERTIFICATION

Mr. CARR. The new generation of commercial aircraft, such as the Airbus A320, Boeing 747-400, and Douglas MD-11, employ extremely sophisticated control systems. In the Safety Board's opinion, does FAA have the technical competence to certify these systems?

If not, what do you believe can be done to improve FAA's technical competency in the certification field?

[The information follows:]

We believe that the safety record of the newer modern airplane indicates that the design engineers and the Federal Aviation Administration (FAA) certification staff are doing a good job. In 1980, following the DC 10 accident that occurred in Chicago in May 1979, the National Research Council convened a committee of government and industry experts to assess the adequacy of the FAA certification process. The committee concluded that the technical competence and state of the art currency originated within the aviation industry and that the FAA generally relied on industry to catch up. This seems to work, however, because the FAA certification staff became involved with the manufacturer during the early stages of a new airplane design and the systematic education and briefing by company engineers provide the FAA staff with the background needed to assure that the airplane meets the regulatory standards. The Safety Board staff believes that the FAA certification staff are technically competent and dedicated to their mission.

At the same time, the Safety Board recognizes that most of the FAA regulations concerning aircraft certification were written during an era when airplane designs were more basic and do not address some of the technological advances that come along with each new generation of airplanes. Thus the FAA has to issue special condition to address these new features leaving open the possibility that something will be overlooked. Fortunately, if an airplane is introduced into line operations with undetected problems, they usually are identified through the airplane's service history and corrected before they cause accidents.

One area of concern to the Safety Board is the emphasis placed on human factors during the certification process. While the FAA several years ago increased its attention to human factors by staff increases and the development of a national human factors plan, the Board is not aware of any tangible application of the plan to the certification process, specification, or the interaction of human performance with new technology.

FAA DESIGNATED ENGINEERING REPRESENTATIVES

Mr. CARR. As NTSB knows, FAA depends on designated engineering representatives employed by manufacturers to certify new aircraft designs. In the Safety Board's opinion, is there a point where FAA can delegate too many certification duties, resulting in a lack of understanding of critical systems?

Do you believe that FAA currently delegates too many critical tests and analyses to these designees?

[The information follows:]

The Safety Board has not found that Federal Aviation Administration (FAA) delegation of certification duties to designated engineering representatives (DERs) has resulted in inadequate FAA knowledge of critical systems. The FAA's DER program allows the FAA to make effective use of manufacturer engineering talent at little or no cost to the taxpayer. The Safety Board often works with the DERs during our major air carrier accident investigations, and we have found them to be honest and conscientious. Our experience is that DERs take their responsibilities seriously and they provide an invaluable resource to the FAA.

For example, we were very favorably impressed with the powerplant/thrust reverser system DER at Boeing during our investigation of the Lauda Airlines Boeing 767 accident in Thailand in 1991. He provided invaluable assistance in our investigation of the accident, with his in-depth knowledge of the system design and knowledge of system service problems. His participation facilitated our identification of the most likely accident problem and played a significant role in the problem resolution.

The delegation of critical testing and analysis to DERs provides the airplane manufacturer the flexibility to meet rigorous development schedules. Further, the use of DERs provides the FAA with individuals trained to a greater depth than would be possible through conventional FAA training. While it would be desirable to have highly knowledgeable and skilled FAA engineering staff involved at all levels of the certification process, the DER program, if appropriately monitored, extends the FAA's engineering certification capability.

Effective monitoring of the DER program by FAA Aircraft Certification Office (ACO) staff is essential to the success of this program. With several new technology aircraft currently involved in the certification process, this would seem like the appropriate time to evaluate the adequacy of the FAA's staffing in their ACOs to assure adequate oversight of the DER program in the future.

FAA AIRCRAFT CERTIFICATION

Mr. CARR. In October 1992, a Boeing 747-200 cargo aircraft crashed in Amsterdam resulting in at least 55 fatalities. In 1991, a similar crash occurred with a Boeing 747-200 cargo aircraft in China.

Press reports indicate that during takeoff under full power the right inboard engine fell off and struck the right outboard engine and FAA did not test the 747-200 design for this possibility as part of its certification activities.

If these reports are accurate, could the FAA have taken steps to identify this problem?

[The information follows:]

To our knowledge, the pylon to the wing attachments for the Boeing 747 were designed as a fail-safe structure. Four fuse pins support the pylon. In the event of a failure of a fuse pin, the remaining pins are supposed to support the structure until the failed pin is detected. The purpose of the fuse pins is to permit the pylons to separate from the wing during loads imposed in a crash landing so that the wing structure and integral fuel tanks remain intact. There apparently was no consideration given to an inflight separation of an engine or trajectory that the engine would follow as a result of thrust loads and gyroscopic loads at the time of separation. Had the Federal Aviation Administration (FAA) considered the failure of the pylon attachments as a possibility during flight, the propensity for the right inboard engine to swing outboard might have been identified. However, it is not likely that

the FAA would have regarded the separation of the pylon-to-wing structure as an acceptable failure mode as a certification basis.

FAA CERTIFICATION STAFF TRAINING

Mr. CARR. In February 1989, an improperly latched Boeing 747-100 cargo door blew open over Honolulu resulting in nine fatalities. The Safety Board's accident report recommended that FAA's certification staff receive training on the interaction of aircraft designs and human performance.

Has FAA adequately responded to this recommendation?

How many of FAA's certification staff have received such training?

[The information follows:]

The Safety Board determined during its investigation that the Boeing 747 cargo door lock mechanism, as originally designed, could be damaged by ground service personnel if the lock handle and latching mechanism were operated in an improper sequence. The Board believed that the possibility of such a human error should have been foreseen and included in a failure mode analysis of the door design. Consequently, the Board recommended that the Federal Aviation Administration (FAA) consider conceivable human errors in addition to electrical and mechanical malfunctions in the design approval process. In response, the FAA stated that they have developed a training program for certification personnel to enhance their knowledge of human factors in aircraft design and that they expected to offer the program to 100 persons during 1991. The Safety Board classified the recommendation "Open-Acceptable Action" based on that response pending further confirmation that the program was conducted. However, the Board has not received such confirmation.

GENERAL AVIATION ACCIDENTS

Mr. CARR. In 1992, 93 percent of all fatal civil aviation accidents occurred in general aviation. The 1992 statistics indicate that, even though the number of general aviation accidents dropped compared with 1991, more people were killed in such accidents.

What do you make of these figures?

Is general aviation safety improving or getting worse?

[The information follows:]

The accident rates for general aviation continue to decline. Some of the improvement has to do with the mix of flying. Increases in the number of corporate/executive flying hours, which is historically the safest general aviation flying, helps to improve the rates. Improvements in communications/navigation equipment and basic hardware has also accounted for improvement.

The Safety Board's Office of Aviation Safety is conducting special-emphasis investigations in several areas. Those areas of investigation are: (1) Robinson R-22 helicopter inflight breakups; (2) Supplemental type certificate and parts manufacture authority effects on aircraft certification; (3) Mid-air collision avoidance; (4) Airport safety and requirements for airport rescue and firefighters; and (5) Home built aircraft oversight by the Federal Aviation Administration.

FLYING IN MOUNTAINOUS TERRAIN

Mr. CARR. The Federal Aviation Administration's Airman's Information Manual states that flying in mountainous terrain presents a much higher risk than other general aviation operations. Nevertheless, I understand that the FAA has no regulations aimed at reducing the risks of mountain flying for general aviation pilots.

On the basis of the Safety Board's investigations of general aviation accidents, do you agree that mountain flying presents a higher risk than other types of general aviation operations? If so, what steps can be taken to minimize this risk?

[The information follows:]

To our knowledge, the Federal Aviation Administration (FAA) does not provide flying time estimates for mountain flying activity so there is no statistical evidence to support the statement that mountain flying poses a higher risk. However, we continue to investigate accidents with causes that are unique to mountain flying which leads us to believe that it does, in fact, pose a special hazard. While we have not conducted any studies in this area, our staff has been sensitive to the situation for several years and it appears the mitigation of the hazard lies in educating pilots through FAA and civilian safety publicans and forums.

The Safety Board is aware that the Government Accounting Office currently has a study underway concerning flying in mountainous terrain.

Mr. CARR. What can FAA do, in your opinion, to help prevent such accidents?

[The information follows:]

The Federal Aviation Administration should continue providing pilots with additional information and educational materials covering flying in mountainous areas through their accident prevention program meetings and publications.

PIPER MALIBU/MIRAGE AIRCRAFT ACCIDENTS

Mr. CARR. In the past several years, there have been five fatal accidents involving Piper Malibu/Mirage aircraft.

What did you find in your special investigation of these accidents?

[The information follows:]

Upon completion of a special investigation of five fatal inflight breakups in the United States involving the Piper PA-46 Malibu/Mirage aircraft over a two-year period, the National Transportation Safety Board found nothing wrong with the aircraft or the autopilot and said both aircraft were properly certificated by the Federal Aviation Administration (FAA). However, the Board stated that special high-altitude training should be expanded.

The Safety Board said the probable cause of the accidents involved pilot failure to use pitot heat in freezing instrument flight conditions, possible misuse of the autopilot, and loss of control leading to inflight structural failure. Factors related to the accidents included the lack of an appropriate pilot checklist item to use pitot heat and inadequate training in the operation of the autopilot and related components.

The Safety Board concluded that a common thread probably was a loss of accurate airspeed indications because of ice-blocked pitot systems. That system works through a specific sensor, known as a pitot tube. The tube is mounted externally and measures the ram effect of air striking it, which is translated into airspeed on a cockpit instrument, the airspeed indicator. The pitot system has no relationship to the autopilots in PA-46 aircraft.

The PA-46 series are a single-engine, high performance, pressurized six-seat aircraft. Capable of flying at speeds of 235 miles per hour, they are certificated to fly up to and including 25,000 feet. No special pilot training is required by the FAA to fly them.

The Safety Board recommended that the FAA expand its special high-altitude training requirements to pilots of small, pressurized aircraft that fly at and above 18,000 feet from the current requirement of above 25,000 feet. The training would include high altitude aerodynamics, meteorology, physiology and integrated flight guidance and control systems.

The Board also recommended that the FAA require a pitot heat operating light for PA-46 aircraft, and an additional item on pilot checklists for climb and cruise flight to activate pitot heat before instrument flight into icing. The Board stated that the FAA should also consider such requirements for aircraft that are certificated to fly at 18,000 feet or higher and in known icing conditions. Additionally, the Board asked for better pilot training information involving autopilots and components.

COMMUTER AIRLINE SAFETY

Mr. CARR. Last year there were seven fatal commuter aviation accidents compared to eight in 1991; the number of fatalities

dropped to 21 in 1992 compared to 77 in 1991. What is your assessment of the status of safety in commuter aviation?

[The information follows:]

In 1992, the total accident rate and the fatal accident rate for scheduled commuter or regional airline aircraft, when cited in terms of accidents per 100,000 departures, was nearly equal to the annual accident rate when averaged over the last 10 years. However, one must note that these statistics refer to operations conducted under 14 CFR Part 135, smaller aircraft, many with 19 seats or less. When examined with the larger airplanes that regional airlines have operated under 14 CFR Part 121, the accident record has improved over the last 10 years, a trend that we at the Safety Board have been quite pleased with. We believe that the decrease is due to several factors.

Because the major airlines have encountered financial circumstances, they have hired few new pilots over the past several years, causing a reduced turnover among regional airline pilots, a major source of new pilots for the airlines. Consequently, the experience level among regional airline pilots has increased.

In addition, the regional airlines have upgraded their fleets with bigger, more sophisticated aircraft. Unlike earlier designed aircraft, flight simulators have been developed as training devices for many of these aircraft. Generally, economic factors had prevented the development of flight simulators for the smaller aircraft that had been used as regional aircraft. Flight simulators enable better training in emergency scenarios than aircraft because more realistic situations can be presented to pilots than can be presented in aircraft.

We expect that the accident rate could continue to improve with the requirement for installation of ground proximity warning systems (GPWS) that the FAA has mandated for regional airline aircraft beginning in 1994. Had GPWS been installed previously, it is possible that at least two of the regional airline accidents that occurred in 1992 could have been avoided.

PILOT FLIGHT AND DUTY LIMITS

Mr. CARR. To what extent do pilots exceeding flight and duty time limits contribute to commuter accidents?

[The information follows:]

Although the Safety Board has found in several commuter accidents that the pilots might have been deprived of sleep as a result of their schedule, the effect of fatigue could not be proven as a factor in the accidents. In these cases, the pilots were within the existing flight and duty time requirements. Although the Board has not evaluated the adequacy of the present rule, it is aware of the Air Line Pilots Association's concern and would like to support a further view of this issue.

COMMUTER PILOT TRAINING

Mr. CARR. In the past, the Safety Board has indicated that pilot training was a problem in the commuter airline industry. In your investigation of the 1992 GP Express commuter airline accident near Anniston, Alabama, it was reported that you have recommended to the FAA that commuter pilots have at least 100 hours of flight time or the equivalent level of training in air carrier operations.

What has been the FAA's response to your recommendations?

[The information follows:]

The Safety Board's report of the 1992 GP Express commuter airline accident near Anniston, Alabama, and associated safety recommendations were adopted by the Safety Board on March 2, 1993. Therefore, the Federal Aviation Administration (FAA) has not had sufficient time to respond to any of these recommendations. Although the FAA is afforded 90 days, by law, in which to respond in writing to such recommendations, we usually receive a response well within that time period.

GP EXPRESS ACCIDENT

Mr. CARR. What did you learn in the hearing you held in September last year as a follow-up to the GP Express accident about procedures used by DOT to select safe carries to provide essential air service to small and medium sized communities?

[The information follows:]

A representative from the Department of Transportation's (DOT) Office of Aviation Analysis testified at the Safety Board's public hearing regarding the 1992 GP Express accident on essential air service (EAS). The representative explained that EAS exists under federal statutes to assist certain communities to receive scheduled air service. Under these provisions, DOT pays a subsidy to the carrier providing the service. DOT's responsibilities are to ensure the financial viability of the carrier, and in conjunction with the communities to be served, to select the best service for these communities. Additionally, DOT maintains surveillance of the carrier throughout the life of the contract.

On September 18, 1991, DOT requested proposals from carriers who were interested in providing EAS at Anniston, Alabama, Gadsden, Muscle Shoals and Tuscaloosa, Alabama, and Laurel/Hattiesburg, Mississippi. The EAS team conducted an evaluation of GP Express' fitness to provide service to these cities. This evaluation included reviewing the Federal Aviation Administration's (FAA) aviation safety analysis system for enforcements and violations, contacting the FAA's regional counsel's office to discuss three open cases, and requesting comments from community leaders, airport officials, and representatives of connecting airlines about their opinion of GP Express' ability to provide adequate service. The evaluation also included a review of GP Express' management depth and financial ability to assure that the carrier had sufficient management expertise and capitalization to handle the expansion.

Prior to awarding the contract, the FAA's principle operations inspector for GP Express was contacted by an official of DOT to determine if GP Express had any operational problems that might make it unsuitable to expand into these new markets. The inspector informed the official that there were no problems with GP Express at that time. On March 26, 1992, GP Express was notified that it had been awarded the EAS contract to serve these cities. Additionally, the EAS evaluation team performed an on-site inspection of GP Express' southern operation before the air carrier began service in the region.

GREYHOUND RECOMMENDATIONS

Mr. CARR. As you know, Greyhound now provides most of the intercity bus service. What safety recommendations have you made to Greyhound in recent years and what follow-up actions has Greyhound undertaken?

[The information follows:]

The National Transportation Safety Board has issued 10 safety recommendations to Greyhound Lines, Inc. All ten recommendations have been closed with acceptable action. Attached is a printout of the ten safety recommendations and Greyhound's response.

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Report : HAR-89-02
Accident Date : November 19, 1988
Accident City : NASHVILLE
Accident State: TN

Recommendation Numbers

H-89-026 H-89-027 H-89-028 H-89-029 H-89-030

Abstract

ABOUT 6:45 A.M., CENTRAL STANDARD TIME, ON NOVEMBER 19, 1988, A GREYHOUND BUS WITH 45 OCCUPANTS, TRAVELING SOUTH BOUND THROUGH A CONSTRUCTION ZONE ON INTERSTATE HIGHWAY 65 IN NASHVILLE, TENNESSEE, SUDDENLY WENT OUT OF CONTROL DURING A STEERING MANEUVER, ROTATED 190 DEGREES CLOCKWISE IN THE SOUTHBOUND LANES, OVERTURNED ON ITS LEFT SIDE, AND CAME TO REST FACING NORTHBOUND ON THE SOUTHBOUND EMBANKMENT. THE UNRESTRAINED BUS DRIVER AND 38 PASSENGERS WERE INJURED IN THE ACCIDENT. TWELVE PASSENGERS SUSTAINED SERIOUS INJURIES, AND THE BUS DRIVER AND 26 PASSENGERS RECEIVED MINOR INJURIES. SIX PASSENGERS WERE NOT INJURED.

Log Number : H-0535
Recommendation Number : H-89-026
Date of Issue : September 28, 1989
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : September 26, 1990

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC.: REVIEW AND MODIFY, AS NEEDED, COMPANY POLICIES AND PROCEDURES TO IDENTIFY BUS DRIVERS WITH UNSAFE PERFORMANCE RECORDS AND THEN PREVENT THEM FROM CONTINUING TO OPERATE BUSES IN A MANNER HAZARDOUS TO PUBLIC SAFETY.

Addressee :GREYHOUND LINES, INC.

Date Of Response:

Date of NTSB Followup Ltr: 02/28/1990

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Date Of Response: 06/28/1990

WE BELIEVE THAT RECOMMENDATIONS H-89-26 AND H-89-27 ARE ADDRESSED BY OUR PROFESSIONAL DRIVERS DEVELOPMENT PROGRAM ("PDDP") (COPY ATTACHED), WHICH IS A PROGRAM DESIGNED TO PROVIDE SPECIFIC RETRAINING FOR DRIVERS WHO HAVE UNSAFE PERFORMANCE RECORDS. WE CONSIDER THIS PROGRAM PROPRIETARY, AND THEREFORE REQUEST THAT YOU NOT REPRODUCE COPIES OF THIS PROGRAM OR ALLOW OTHERS TO HAVE ACCESS TO IT.

Date of NTSB Followup Ltr: 09/26/1990

Log Number : H-0535
Recommendation Number : H-89-027
Date of Issue : September 28, 1989
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : September 26, 1990

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC.: DEVELOP A STRUCTURED RECURRENT TRAINING PROGRAM, ENCOMPASSING CLASS ROOM INSTRUCTION AS WELL AS SIMULATOR AND/OR BEHIND-THE WHEEL INSTRUCTION, DESIGNED TO HELP MAINTAIN THE PERFORMANCE OF COMPANY BUS DRIVERS AT HIGH STANDARDS, AND REQUIRE ALL BUS DRIVERS TO PARTICIPATE ON A REGULAR BASIS; INCLUDE IN THIS PROGRAM INSTRUCTION ON SAFE BUS OPERATIONS IN ADVERSE WEATHER CONDITIONS.

Addressee :GREYHOUND LINES, INC.

Date Of Response:

Date of NTSB Followup Ltr: 02/28/1990

Date Of Response: 06/28/1990

WE BELIEVE THAT RECOMMENDATIONS H-89-26 AND H-89-27 ARE ADDRESSED BY OUR PROFESSIONAL DRIVERS DEVELOPMENT PROGRAM ("PDDP") (COPY ATTACHED), WHICH IS A PROGRAM DESIGNED TO PROVIDE SPECIFIC RETRAINING FOR DRIVERS WHO HAVE UNSAFE PERFORMANCE RECORDS. WE CONSIDER THIS PROGRAM PROPRIETARY, AND THEREFORE REQUEST THAT YOU NOT REPRODUCE COPIES OF THIS PROGRAM OR ALLOW OTHERS TO HAVE ACCESS TO IT.

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Date of NTSB Followup Ltr: 09/26/1990

Log Number : H-0535
Recommendation Number : H-89-028
Date of Issue : September 28, 1989
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : September 26, 1990

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC.: REVISE THE FORM BUS DRIVERS ARE REQUIRED TO COMPLETE AS PART OF THEIR BIENNIAL PHYSICAL EXAMINATIONS SO THAT BY SIGNING THE DOCUMENT THEY CERTIFY THAT THE MEDICAL HISTORY THEY HAVE PROVIDED IS BOTH COMPLETE AND ACCURATE AND THAT GREYHOUND HAS THE AUTHORITY TO OBTAIN INFORMATION ON THE BUS DRIVERS' MEDICAL HISTORY FROM THEIR PERSONAL HEALTH CARE PROVIDERS; AND REVISE THE FORM TO REQUIRE BUS DRIVERS TO PROVIDE INFORMATION ON ANY ILLNESS OR INJURY INCURRED DURING THE PREVIOUS 2 YEARS OR SINCE THE LAST CERTIFICATION EXAMINATION.

Addressee :GREYHOUND LINES, INC.

Date Of Response:

Date of NTSB Followup Ltr: 01/03/1990

Date Of Response: 06/28/1990

THE PHYSICAL EXAMINATION FORM HAS BEEN REVISED (COPY ATTACHED) TO ADDRESS THE POINTS RAISED IN RECOMMENDATION H-28-029

Date of NTSB Followup Ltr: 09/26/1990

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Log Number : H-0535
Recommendation Number : H-89-029
Date of Issue : September 28, 1989
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : September 26, 1990

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC.: ESTABLISH AND ENFORCE A POLICY THAT EACH INDIVIDUAL CONDUCTING THE FEDERALLY REQUIRED ANNUAL REVIEW OF A BUS DRIVER'S TRAFFIC RECORD BE A SUPERVISOR WHO IS FAMILIAR WITH THAT RECORD, QUALIFIED TO INTERPRET IT, AND AUTHORIZED TO IMPOSE APPROPRIATE MEASURES IN RESPONSE TO FINDINGS FROM THE REVIEW.

Addressee : GREYHOUND LINES, INC.

Date Of Response:

Date of NTSB Followup Ltr: 02/29/1990

Date Of Response: 06/28/1990

ANNUAL REVIEW PROCEDURES FOR DRIVER QUALIFICATION FILES HAVE BEEN MODIFIED AND REQUIRE THE REVIEW TO BE CONDUCTED UNDER THE DIRECT SUPERVISION OF OUR SAFETY AND MANPOWER MANAGERS. A COPY OF THE REVIEW FORM WHICH IS ATTACHED TO DRIVER QUALIFICATION FILES IS ENCLOSED. WE BELIEVE THAT BY HAVING THE MANAGEMENT OF THE DRIVER QUALIFICATION FILES UNDER THE DIRECT SUPERVISION OF OUR SAFETY AND MANPOWER MANAGERS WE ARE MEETING THE REQUIREMENT RECOMMENDATION H-89-29.

Date of NTSB Followup Ltr: 09/26/1990

Log Number : H-0535
Recommendation Number : H-89-030
Date of Issue : September 28, 1989
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : January 06, 1992

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC.: INSTITUTE A PROGRAM TO EDUCATE COMPANY BUS DRIVERS ABOUT THE NEED FOR PROPER NOURISHMENT WHILE ON DUTY AND ALSO TO EDUCATE BOTH BUS DRIVERS AND THEIR FAMILIES ABOUT THE STRESSES IMPOSED BY NIGHT WORK AND SHIFT WORK, AS WELL AS THE ADVERSE EFFECT THESE STRESSES CAN HAVE ON SAFE JOB PERFORMANCE.

Addressee :GREYHOUND LINES, INC.

Date Of Response:

Date of NTSB Followup Ltr: 02/28/1990

Date Of Response: 06/28/1990

WITH REGARD TO RECOMMENDATION H-89-30, WE ARE NOT CURRENTLY IN A POSITION TO INSTITUTE A FORMAL EDUCATION PROGRAM ON PROPER NOURISHMENT. WE WILL UTILIZE COMPANY BULLETIN BOARDS AND DRIVER MEETINGS TO STRESS PROPER EATING HABITS AND THEIR INFLUENCE ON SAFE JOB PERFORMANCE.

Date of NTSB Followup Ltr: 09/26/1990

Date Of Response: 11/14/1991

WE ARE PLEASED TO ANNOUNCE AND FORWARD FOR YOUR REVIEW, GREYHOUND LINES' DRIVER TRAINING VIDEO, "FUEL FOR THOUGHT", ACCOMPANIED BY THE FACILITATOR'S MANUAL, QUESTIONNAIRE AND SAMPLE DIET PLAN. WE ARE ALSO PRODUCING AN IN-SERVICE DRIVER TRAINING VIDEO REGARDING PROPER EXERCISE AND STRESS REDUCTION.

Date of NTSB Followup Ltr: 01/06/1992

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Report : HAR-92-01
Accident Date : June 26, 1991
Accident City : DONEGAL
Accident State: PA

Recommendation Numbers

H-92-013 H-92-014 H-92-015 H-92-016 H-92-017

Abstract

ON JUNE 26, 1991, ABOUT 1:50 P.M., A GREYHOUND BUS TRAVELING FROM CLEVELAND, OHIO, TO WASHINGTON, D.C., RAN OFF THE RIGHT SIDE OF THE ROADWAY AND OVERTURNED ON THE PENNSYLVANIA TURNPIKE NEAR DONEGAL, PENNSYLVANIA. ONE PASSENGER WAS FATALY INJURED, THE DRIVER AND 14 PASSENGERS WERE INJURED, AND 1 PASSENGER WAS UNINJURED. ON AUGUST 3, 1991, ABOUT 6:45 A.M., A GREYHOUND BUS TRAVELING FROM NEW YORK CITY TO BUFFALO, NEW YORK, RAN OFF THE RIGHT SIDE OF THE ROADWAY, AND OVERTURNED ON STATE ROUTE 79 NEAR CAROLINE, NEW YORK. THE DRIVER AND 33 PASSENGERS WERE INJURED, AND 5 PASSENGERS WERE UNINJURED.

Log Number : H-0563
Recommendation Number : H-92-013
Date of Issue : April 01, 1992
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : December 21, 1992

Recommendation Subject

THE NTSB RECOMMENDS THAT GREYHOUND LINES, INC., IMPLEMENT A NEW DRIVER CERTIFICATION PROGRAM DESIGNED TO IDENTIFY THOSE DRIVERS EXPERIENCING DRIVING-SKILL-RELATED DIFFICULTIES AS THEY PROGRESS THROUGH THE TRAINING, LICENSING, AND CUBING PROCESSES. THE PROGRAM SHOULD INCLUDE A PROVISION FOR REMEDIAL TRAINING AND SUPERVISED BEHIND-THE-WHEEL DRIVING EXPERIENCE.

Addressee :GREYHOUND LINES, INC.

Date Of Response: 05/15/1992

DRIVE CANDIDATE BEHIND-THE WHEEL TRAINING WAS INCREASED BY TWENTY HOURS. ALONG WITH CONSIDERABLE CLASSROOM TRAINING, OUR BASIC PROGRAM NOW REQUIRES CANDIDATES TO SPEND AT LEAST THIRTY-TWO HOURS BEHIND-THE-WHEEL, WITH ANOTHER THIRTY-SIX HOURS OF IN-BUS OBSERVATION TIME. A DRIVER INSTRUCTOR WILL BE PRESENT THROUGHOUT, OBSERVING AND CRITIQUEING. PROGRESS IS CLOSELY MONITORED, WITH DAILY EVALUATIONS.

Date of NTSB Followup Ltr: 08/31/1992

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Date Of Response: 09/21/1992

OUR EFFORTS IN REMEDIAL TRAINING NOW ALSO BEGIN WITH CHANGES IN THE WRITTEN MATERIALS. STUDENT NOW ARE EACH PROVIDED A WORKBOOK. UPON BEGINNING THE COURSE, DRIVING-SKILL-RELATED DIFFICULTIES ARE ADDRESSED IN THREE WAYS. FIRST, THEY ARE NOTED AND DISCUSSED DURING NORMAL BEHIND-THE-WHEEL EXERCISES. SECOND, THEY ARE EVALUATED IN THE COURSE OF THE DAILY REVIEW AND PROFICIENCY. THIRD, IF THE DIFFICULTIES PERSIST, THE STUDENT WILL BE REMOVED FROM THE PROGRAM.

Date of NTSB Followup Ltr: 12/21/1992

Log Number : H-0562
Recommendation Number : H-92-014
Date of Issue : April 01, 1992
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : December 21, 1992

Recommendation Subject

THE NTSB RECOMMENDS THAT THE GREYHOUND LINES, INC., REVIEW THE "DOUBBINS" PROGRAM AS CURRENTLY DEFINED TO ENSURE THAT IT IS BEING CONSISTENTLY ADHERED TO THROUGHOUT THE COMPANY.

Addressee :GREYHOUND LINES, INC.

Date Of Response: 05/15/1992

GREYHOUND FAILED TO OFFICIALLY RESPOND TO THIS RECOMMENDATION.

Date of NTSB Followup Ltr: 08/31/1992

Date Of Response: 09/21/1992

THE SAME WORKBOOK USED TO DOCUMENT THE STUDENT'S DRIVING SKILLS IS USED AS A BACKCHECK TO ASSURE THAT PROPER DOUBBING TIME, AS A DRIVER, HAS BEEN COMPLETED. GREYHOUND NOW REQUIRES FIFTY HOURS OF DRIVING TIME AS A COMPONENT OF ITS "FINISHING SCHOOL" PROGRAM. THIS TIME IS LOGGED IN THE WORKBOOK AND SUBJECT TO INSPECTION. A STUDENT CANNOT GRADUATE FROM THE PROGRAM WITHOUT EIGHTY-TWO HOURS OF ACTUAL DRIVING TIME (THIRTY-TWO HOURS IN THE PRIMARY PROGRAM AND FIFTY HOURS IN THE FINISHING SCHOOL) LOGGED IN THE WORKBOOK.

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Date of NTSB Followup Ltr: 12/21/1992

Log Number : H-0563
Recommendation Number : H-92-015
Date of Issue : April 01, 1992
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : December 21, 1992

Recommendation Subject

THE NTSB RECOMMENDS THAT THE GREYHOUND LINES, INC.: STANDARDIZE THE PROCESS FOR DEVELOPING AND PRESENTING ROUTE DIRECTIONS PROVIDED TO DRIVERS AND ENSURE THAT THE DIRECTIONS ARE CORRECT AND EASY TO COMPREHEND.

Addressee :GREYHOUND LINES, INC.

Date Of Response: 05/15/1992

ROUTE GUIDES ARE CONTINUALLY UPDATED, AND OUR OPERATIONS PERSONNEL ARE REVIEWING WAYS TO SIMPLIFY THE PRESENTATION OF INFORMATION TO DRIVERS. WE CONSIDER THE BOARD'S RECOMMENDATION WELL TAKEN. WE WILL ALSO CONTINUE REVIEWING OTHER POSSIBLE SOLUTIONS.

Date of NTSB Followup Ltr: 08/31/1992

Date Of Response: 09/21/1992

YOU ALSO ASKED ABOUT OUR PROGRESS IN STANDARDIZING ROUTE DIRECTIONS. I AM PLEASED TO REPORT THAT THIS PROJECT WAS COMPLETED IN JUNE OF THIS YEAR.

Date of NTSB Followup Ltr: 12/21/1992

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Log Number : H-0563
Recommendation Number : H-92-015
Date of Issue : April 01, 1992
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : August 31, 1992

Recommendation Subject

THE NTSB RECOMMENDS THAT THE GREYHOUND LINES, INC.: DURING CUBING, PROVIDE NEW BUSDRIVERS WITH BEHIND-THE-WHEEL TRAINING THAT WILL PREPARE THEM TO DRIVE DURING CONDITIONS FREQUENTLY ENCOUNTERED IN THEIR OPERATING REGIONS, SUCH AS MOUNTAINOUS TERRAIN, INCLEMENT WEATHER, OR EXCESSIVE TRAFFIC CONGESTION.

Addressee :GREYHOUND LINES, INC.

Date Of Response: 05/15/1992

AFTER THE CANDIDATE RECEIVES THEIR CDL AND COMPLETES THE BASIC PROGRAM COMES THE PHASE WE REFER TO AS "DRIVER FINISHING SCHOOL." THE CANDIDATE WILL BE ASSIGNED TO A PRESELECTED AND SPECIALLY TRAINED WORKING DRIVER. THE CANDIDATE BECOMES ACQUAINTED WITH THE PRACTICAL ASPECTS OF DRIVING THE BUS AND OPERATING ROUTES. THEN WE REQUIRE THE DRIVERS TO LEARN THE ROUTES. THROUGHOUT THE FINISHING SCHOOL THE CANDIDATE IS CONTINUALLY EVALUATED.

Date of NTSB Followup Ltr: 08/31/1992

Log Number : H-0563
Recommendation Number : H-92-017
Date of Issue : April 01, 1992
NTSB Status : CLOSED - ACCEPTABLE ACTION
Closeout Date : December 21, 1992

Recommendation Subject

THE NTSB RECOMMENDS THAT THE GREYHOUND LINES, INC.: DEVELOP EFFECTIVE POLICIES THAT ALLOW EMPLOYEES TO TURN DOWN DRIVING ASSIGNMENTS AND REPORT OFF DUTY WHEN THEY ARE IMPAIRED BY LACK OF SLEEP OR ARE OTHERWISE UNFIT FOR DUTY.

Addressee :GREYHOUND LINES, INC.

National Transportation Safety Board
SAFETY RECOMMENDATIONS THAT WERE ISSUED TO GREYHOUND LINES, INC.
Report Date: 03/19/1993

Date Of Response: 05/15/1992

WE ARE STUDING WAYS TO FURTHER MINIMIZE THE CHANCES OF AN UNFIT DRIVER GETTING BEHIND THE WHEEL. WE ARE IMPLEMENTING AN IN-SERVICE TRAINING PROGRAM TEACHING DRIVERS HOW TO IMPROVE CONCENTRATION, REDUCE MUSCLE FATIGUE AND INCREASE ALERTNESS.

Date of NTSB Followup Ltr: 08/31/1992

Date Of Response: 09/21/1992

IN ADDITION TO OUR OTHER EFFORTS, NOTED IN THE MAY 15TH LETTER, WE ARE ADDING A DISCUSSION OF THE ISSUE INTO OUR IN-SERVICE TRAINING PROGRAM. AS THE TRAINING IS DELIVERED THROUGHOUT THE YEAR, EMPLOYEES WILL AGAIN BE REMINDED THAT THEY ARE NOT TO DRIVE WHEN IMPAIRED BY LACK OF SLEEP OR OTHERWISE UNFIT FOR DUTY.

Date of NTSB Followup Ltr: 12/21/1992

GREYHOUND OPEN RECOMMENDATIONS

Mr. CARR. Do you have any outstanding open recommendations pertaining to Greyhound?

[The information follows:]

There are currently no safety recommendations issued to Greyhound in an open status.

VERNON, NJ, BUS ACCIDENT

Mr. CARR. In October 1992, the Board conducted a public hearing on State and national regulations concerning charter bus certification and inspection issues. This hearing stemmed from the Safety Board's investigation of a fatal accident in Vernon, New Jersey involving a charter bus with defective brakes.

What did you learn from the public hearing?

[The information follows:]

The Board focused on two issues in the public hearing—carrier identification and vehicle inspections. Currently, there is an inability to properly identify all intercity bus carriers subject to FHWA carrier reviews, and vehicle safety oversight. Further, because buses are extremely difficult to inspect, the Safety Board believes that they do not receive the same level of scrutiny as commercial trucks. Consequently, there may be a larger problem with their mechanical condition than is currently known.

CHARTER BUS SAFETY

Mr. CARR. Do you believe that there are systemic problems with the safety of charter buses?

[The information follows:]

Based on our investigations of intercity city bus operations, the Safety Board has identified three generic safety problems—inadequate driver qualifications, ineffective Federal and state motor carrier oversight, and questionable vehicle maintenance.

HEAVY TRUCK BRAKES

Mr. CARR. Last year, the Safety Board completed a study on heavy truck brake performance and issued 35 recommendations to FHWA and NHTSA to make Federal brake standards more rigorous, including a recommended standard that anti-lock brakes be required on all newly manufactured vehicles.

Please outline the problems discussed in your report and discuss the responses you received from FHWA and NHTSA.

[The information follows:]

Federal accident data indicate that although combination trucks account for only 1.8 percent of all U.S. highway accidents, they are involved in 61.7 percent of all fatal accidents. The number of fatal accidents per 100 million miles for combination trucks is nearly double that of passenger cars. More than 5,000 people are killed every year in the United States in heavy truck accidents.

The Safety Board's study, "Heavy Vehicle Air Brake Performance," was based in part on its investigations of 18 brake-related heavy vehicle accidents that occurred between December 1988 and November 1990. The most common deficiency cited was out-of-adjustment brakes, although other maintenance-related and component issues were also factors in these accidents.

The Safety Board and authorities in Florida, Pennsylvania, Oregon, Illinois and Texas also conducted roadside inspections of 1,520 five-axle heavy trucks along interstate and secondary roads. Of those, 46.1 percent were placed out of service because of improperly adjusted brakes. Another 10.2 percent were placed out of service because of other brake problems. The Board noted that the inspection sample data characterized brake adjustment nationwide at the time the inspections were conducted.

Based on the results of the roadside inspections and accident investigations, the Board believes that more complete and stringent federal brake standards are required.

The Federal Highway Administration (FHWA) regulations require an inspection of air brake systems for in-service vehicles daily by the driver and annually by a licensed mechanic. The driver is required only to satisfy himself that the service brakes, parking brake, and trailer brake connections are in good working order. However, the Board noted that it is difficult to check the working order of an air brake system without a detailed and systematic examination of the components; such an examination generally requires more than one person.

The Safety Board issued 35 safety recommendations as a result of this study to the National Highway Traffic Safety Administration (NHTSA), the FHWA, and various industry groups. The study was well received and safety recommendation responses have been favorable and timely. For example, the NHTSA recently finalized its rulemaking on requirements for automatic air brake slack adjusters and visual indicators, and has initiated a rulemaking requiring air brake slack adjusters on all newly manufactured air brake vehicles. Also, the NHTSA/FHWA have initiated field testing of mobile brake performance in roadside inspections.

MOTOR CARRIER SAFETY PROGRAM

Mr. CARR. In your study, you identified a significant difference between heavy truck brake inspection you conducted and those conducted by the States under the motor carrier safety assistance program. Safety Board inspections were at least twice as likely to result in trucks being placed out of service due to brake deficiencies than State inspections.

What is your assessment of the FHWA's motor carrier safety program?

[The information follows:]

Because substantial differences were noted in the Safety Board's recent Brake Study report between State and NTSB reported data on out-of-service (OOS) rates for heavy truck inspections, the Board directed the staff to identify the reasons for the reported differences, and to address potential corrective action in a second study.

The data compilation effort for the second study has been completed. It focuses on the manner in which heavy truck inspections are being conducted by State and Federal agencies. Safety Board staff examined the Motor Carrier Safety Assistance Program (MCSAP), including State funding levels, inspector training, adequacy of inspection facilities, and quality control of reported data. Approximately 800 additional heavy truck inspections and three in depth and 47 cursory state program reviews have been conducted. Also, the FHWA has provided previous data on MCSAP inspections by state from 1986 through 1991.

The preliminary evaluation of this data indicates that the OOS rates for truck inspections conducted in 1992 were very similar to those noted in 1990 data. Also, the data review from FHWA indicates that very few level (1) in depth vehicle inspections were conducted in the MCSAP program.

TRUCK WHEEL SEPARATIONS

Mr. CARR. The Safety Board has had underway a special investigation into the highway safety hazards of wheels separating from medium/heavy trucks. Three accidents, causing five fatalities, occurred involving such wheel separations in the past 2 years.

What is the magnitude of accidents involving medium/heavy truck wheel separations?

Is this a significant safety problem?

[The information follows:]

Based on its findings, the Safety Board concluded in its recent special investigation that compared to the 349,000 truck accidents that occur annually, the incidence of wheel separations is small, about 750 to 1,050 per year. From the data accumulated, the Safety Board identified the following maintenance problems: inadequate inspection guidelines, including frequency and procedures for the proper inspection of wheel fasteners and lubrication of bearings; lack of uniform maintenance guidelines among manufacturers; and failure by carriers and mechanics to adhere to recommended maintenance guidelines published by wheel manufacturers.

Mr. CARR. What are the primary causes of wheel separations from medium/heavy trucks?

[The information follows:]

The Safety Board found that no one data source was sufficient to enable it to determine the leading causes of wheel separations. The Fatal Accident Reporting System data sample was small and often inconclusive. Most State police report forms did not categorize tire and wheel defects separately. The Office of Motor Carrier data obtained for the Board's report were a small sample covering the Office of Motor Carrier's Region 4. Five of the six States queried by the Safety Board provided computer statistics from which the cause of wheel separations could not be determined. Only one of the four major carriers queried kept wheel separation maintenance records on its fleet.

Despite the lack of comprehensive data, the Safety Board found that the databases examined show similar patterns and, in combination, enabled it to identify that the most probable causes of wheel separations are the loss or breakage of wheel fasteners and wheel bearing failure. Both result from improper maintenance.

Mr. CARR. What recommendations were made as a result of your investigative effort?

[The information follows:]

As a result of the Board's special investigation of medium/heavy truck wheel separations, the following safety recommendations were issued:

To the American Trucking Associations in cooperation with the National Wheel & Rim Association, the Motor Vehicle Manufacturers Association of the United States, Truck Trailer Manufacturers Association, and the Society of Automotive Engineers:

Develop and disseminate model guidelines for the inspection and maintenance of all types of medium/heavy truck wheels (H-92-98)

Develop uniform recommended practices that specify how often truck wheel bearings should be examined. (H-92-99)

Promote an educational program on proper wheel tightening procedures through carriers, manufacturers, and government. (H-92-100)

Encourage manufacturers to provide a label on trucks that indicates the recommended torque for wheel fasteners, proper tightening sequence, and recommended frequency for retorquing fasteners. (H-92-101)

To the Federal Highway Administration, in cooperation with the American Trucking Associations, the National Wheel & Rim Association, the Motor Vehicle Manufacturers Association of the United States, Truck Trailer Manufacturers Association, and the Society of Automotive Engineers:

Support the development of an educational program on proper wheel tightening procedures by the carriers and manufacturers. (H-92-102)

To the Department of Transportation:

Encourage the State to separate wheel defects from fire defects in future accident data collection efforts. (H-92-103)

LIMITED VISIBILITY ACCIDENTS

Mr. CARR. In September of last year, the Safety Board issued a new report calling for more comprehensive measures at the Federal, State, and local levels to reduce accidents stemming from fog and limited visibility road conditions.

How big of a safety program is this?

How many annual highway fatalities are attributed to fog conditions?

[The information follows:]

The program is fairly limited. At a Safety Board special fog hearing, witnesses testified that a selected number of U.S. highways have limited-visibility-prone areas requiring strict traffic control and that many States have implemented measures to deal with this safety problem. However, the measures vary and may cause driver confusion and result in non-uniform driver response. The Safety Board consequently believes that preventing limited-visibility, multiple-vehicle collisions requires uniform driver response and that countermeasures should be uniform nationwide to avoid driver confusion. No single Federal agency is responsible for coordinating, identifying and distributing countermeasure information to other Federal agencies on the State and local levels.

In 1989, 1990, and 1991, deaths on interstate highways when fog was present numbered 103, 84, and 67, respectively. During the same years, 783, 718, and 667 people were killed on all classes of roads (including interstate highways) when fog was present. Between 1989 and 1991, 6,804 people were killed when fog was present on all classes of roads.

Mr. CARR. What measures do you recommend to counter fog-related traffic fatalities and injuries?

[The information follows:]

As a result of six limited visibility, chain-reaction collisions, the Safety Board said the goal should be for drivers to travel about the same speed uniformly and safely

through hazardous areas. The Board recommended the use of such devices as changeable message signs displaying appropriate speeds and other specific behavioral guidance; detectors and microprocessors to detect traffic flow disruptions, and automatically adjusted and uniformly maintained speed limits in advance of and through low-visibility areas. Aggressive police enforcement of speed limits and public education programs also was urged.

RAIL TRANSIT ACCIDENT REPORTING FORM

Mr. CARR. The NTSB has recommended that the FTA develop an accident/incident reporting form for rail transit systems that distinguishes between passenger and employee injuries and fatalities, and requires transit systems to file these reporting forms periodically.

What actions have been taken by the FTA to respond to these recommendations?

[The information follows:]

On January 15, 1993, the Federal Transit Administration (FTA) issued a final rule on the uniform system of accounts and records and reporting system. The Safety Board has reviewed the final rule and believes that the program has incorporated changes that will improve the value of the reported data for analysis. The Board is awaiting a final response from the FTA to determine if all components of the Board's recommendation have been fully addressed. Safety recommendation R-91-36 is currently in an "Open—Acceptable Response" status.

FRA RECOMMENDATION ACCEPTANCE RATE

Mr. CARR. In recent years, the FRA has had the lowest acceptance rate of your recommendations.

What progress have you made in working with the FRA?

What was FRA's acceptance rate during the past year?

[The information follows:]

The Safety Board continues to make progress in its relationship with the Federal Railroad Administration (FRA). The advances made between 1988 and 1992 brought the FRA from a 65 percent acceptance rate in 1988 to 74 percent in 1992. The current rate for the FRA is 72.1 percent. We continue to work closely with the FRA both in the accident investigation phases and during the follow-up process for the Board's safety recommendations.

TANK TRUCK ROLLOVER RECOMMENDATION RESPONSE

Mr. CARR. The Safety Board has recommended that RSPA and FHWA work to improve the design and performance of tank truck rollover protection devices, including promulgating performance standards for these devices.

What follow-up actions have RSPA and FHWA taken?

[The information follows:]

The Board recommended that RSPA provide cargo tank manufacturers with specific written guidance about how to comply with the regulations, including (a) the factors and assumptions that must be considered when calculating the loads on cargo tank rollover protection devices in determining compliance with existing DOT performance standards; and (b) acceptable means to shield and protect the top-mounted closure fittings on all bulk liquid cargo tanks. On June 29, 1992, the RSPA advised the Safety Board that it believed that specific guidelines for rollover protection on cargo tanks and shielding of fittings on the top of cargo tanks should be developed by industry, rather than RSPA. On August 12, 1992, the Safety Board advised RSPA that its suggested approach would not solve the problem; the industry would still be forced to interpret the standards and make assumptions on how to comply. RSPA must develop its standards and provide written guidance for the industry on how to comply with performance standards with the help of the industry. Safety Recommendation H-92-1 is classified as "Open—Unacceptable Response."

RSPA has agreed to help FHWA evaluate the design of rollover protection devices that failed on cargo tanks involved in accidents and to assist the FHWA to model and analyze rollover protection devices required for cargo tanks and the forces acting on them during accidents. The RSPA noted that if the analysis determines it to be necessary, it will assist the FHWA to promulgate performance standards for rollover protection devices based on engineering modeling and analysis.

On July 19, 1992, the FHWA advised the Board that it had hired a contractor to evaluate the designs of overturn protection devices used by specific manufacturers and that it was developing a program to systematically evaluate the design and construction of cargo tanks including the hiring of 2 full-time structural engineers. The FHWA further advised that it would explore the feasibility of improving the performance requirements for rollover protection devices on cargo tanks by modeling and analyzing the forces that act upon rollover protection devices during a rollover accident and will work with RSPA to implement the remaining recommendations if found, as a result of analysis, to be necessary.

TRACK SAFETY WORKSHOPS

Mr. CARR. In 1990, the Safety Board recommended that the FRA review its track safety standards, including procedures for installing and maintaining continuous welded rail. A requirement for such a study was included in the 1992 Rail Safety Enforcement and Review Act. FRA is currently holding workshops to carry out the requirement. Representatives of the Safety Board have been involved in this process, observing and participating in the workshops.

What is your view of the progress being made?

[The information follows:]

The Safety Board's staff believes that the workshop they attended in Denver, Colorado on February 23, 1993, was a positive step toward updating the current Federal Railroad Administration (FRA) track safety standards to be more in line with the technology of today's railroad operations. The meeting was very informal and resulted in direct input with open discussions for the FRA subject areas. Those areas were: inspector qualifications, restoration and renewal of track, lateral track resistance, gage restraint, continuous welded rail, and vehicle track interaction.

The last workshop is scheduled for March 30 and 31, 1993, in Washington, D.C. The subjects selected by FRA are: excepted track inspection requirements, definitions, and other issues affecting track or related structures. Safety Board staff will attend this workshop and will continue to monitor the progress of the proposed revisions.

Mr. CARR. Do the issues being addressed in the workshops adequately address the Safety Board's concerns stated in previous recommendations and testimony?

[The information follows:]

The Safety Board's staff believes that the issues being addressed in the workshops are a positive step toward updating the current Federal Railroad Administration track safety standards, and do address Board safety recommendations.

LOCOMOTIVE FUEL TANKS

Mr. CARR. In October 1992, the Safety Board issued a safety study regarding the integrity of locomotive fuel tanks. The study reported that no data exist to determine the extent of fuel tank ruptures or spills annually.

If no such data exist, why do you believe that improvements are needed in locomotive fuel tank design?

[The information follows:]

In 1990, the Safety Board investigated three major accidents involving collisions and derailments of locomotives that resulted in ruptured locomotive fuel tanks and diesel fuel fires. There were seven fatalities and several reported cases of smoke inhalation in these accidents, which occurred at Sugar Valley, Georgia; Corona, California; and Boston, Massachusetts. These accidents prompted the Safety Board to review available accident data to determine the prevalence of fuel-tank-induced fires in rail collisions. The Board concluded in its report of the accident at Corona, California, that "neither research nor accident data exist about the effect of ruptured or leaking locomotive fuel tanks in railroad accidents in which postcrash fires occurred."

The Board's selective investigations of railroad accidents and the limited data available on locomotive fuel tank spills and fires precludes a comprehensive determination of the failure modes of locomotive fuel tanks. The investigations do demonstrate, however, that rail can dent and puncture the tank. The investigations also show that locomotive components and the track structure not only can dent and puncture, but they can crush the tank during the more severe derailments and head-on collisions, particularly if a locomotive turns over or one locomotive overrides another. Further, although 9 specific accidents investigated by the Board in 1991 in which there were fuel tank fires represented only about 4 percent of the Federal Railroad Administration's reportable accidents involving locomotive derailments for that year, these 9 accidents included 100 percent of the onboard crewmember fatalities for that year. Thus, fuel tank damage, fuel spills, and fuel fires are a safety issue in the more severe locomotive derailment accidents.

It has been argued that fuel tanks cannot reasonably be designed for and placed on locomotives in a manner to reduce or eliminate ruptures in the more severe accidents. However, the Safety Board is not convinced that this is so. More importantly, it is clear that current fuel tanks have not been so designed nor has adequate research been performed to determine if improvements sufficient for fuel tanks to survive such accidents are possible. The Board believes, therefore, that the Federal Railroad Administration, the Association of American Railroads and the two major locomotive manufacturers--General Electric and the Electro-Motive Division of General Motors--should conduct research to determine if the locomotive fuel tank can be improved to withstand the forces encountered in the more severe locomotive derailment accidents or if fuel containment can be improved to reduce the rate of fuel leakage and, consequently, fuel ignition.

Mr. CARR. What steps have been taken by FRA to improve data collected pertaining to post-crash fires involving locomotive fuel tank ruptures and spills?

[The information follows:]

The Safety Board has been informed by the Federal Railroad Administration (FRA) that information on fuel tank rupture, fuel tank capacity, the extent of fuel spills, fuel fires, and weaknesses in the fuel tank design will be collected in conjunction with an overall effort to collect information on several locomotive crashworthiness features, as required by section 10 of the Rail Safety Enforcement and Review Act. The Board's review of the FRA data collection forms indicates, however, that information on locomotive fuel tanks, as well as the other crashworthiness features, will be collected only for those accidents involving collisions of locomotives built after August 1, 1990, i.e., those locomotives built in compliance with the Association of American Railroads' specification S 580.

The Safety Board has several concerns about this. First, because the data being collected on those locomotives built after August 1990 has not been collected similarly on locomotives built prior to that date, a comparison of how the locomotives react in accident environments may be difficult. Second, there is probably little, if any, change to the design of the fuel tanks installed on those locomotives built before or after August 1990. The only change that is likely to exist is the increased thickness of the end and side walls. However, based on the form provided by the FRA, it is unlikely that information on wall thickness will be collected. Third, fuel tank damage occurs in non-collision locomotive derailments, yet information on fuel tank damage apparently will not be documented or collected for that type of accident. Consequently, although the Safety Board supports the FRA's efforts to collect information on several locomotive crashworthiness features, the Board remains concerned that the data collected on fuel tank damage may be too limited to be useful in analyzing fuel tank structural integrity. The Safety Board has asked the FRA to consider these concerns.

LOCOMOTIVE FUEL TANKS—PROPOSED MODIFICATIONS

Mr. CARR. You recommend that the FRA work with industry on additional research to test and evaluate recent and proposed design modifications to fuel tanks.

What has been the response of the different entities to which you directed your recommendations?

[The information follows:]

Representatives from General Electric, General Motors, the Federal Railroad Administration (FRA), and the Association of American Railroads (AAR)—the recipients of the Board's recommendation to conduct research on fuel tank integrity—met on February 2, 1993 to discuss the intent of the Board's recommendation. General Motors has indicated that it is in general agreement with AAR's plans to conduct research and will support FRA research into fuel tank structure integrity. However, the AAR has not responded with details of the research being contemplated, and the FRA has indicated that because of funding constraints, cooperative research may be limited in scope. General Electric has not responded to the Board's recommendation.

COMSTOCK, MICHIGAN, GRADE CROSSING ACCIDENT

Mr. CARR. Last week, an Amtrak train struck a tank truck at a highway grade crossing in Comstock, Michigan, killing the driver of the truck.

What can you tell us about the status of your investigation?

[The information follows:]

Amtrak train 350 collided with a propane truck at a private grade crossing in Comstock, Michigan on March 10, 1993. The grade crossing was protected with crossbucks and a stop sign. There were no flashing lights or gates at the grade crossing.

The propane truck was traveling down a road with a six percent grade in a heavy snow storm. One witness reported seeing the truck's brakes lock up and the truck skid into the grade crossing. Another witness reported seeing the driver using a cellular phone before the accident. The Amtrak engineer, who received second and

third degree burns from the fire which ensued after the collision, said he had about 200 feet visibility before he saw the truck.

GRADE CROSSING ACCIDENTS

Mr. CARR. I understand that the most prevalent cause of fatalities in railroad accidents occurs at highway grade crossings.

Is that what your accident investigations show?

Please update us on the magnitude of this problem.

[The information follows:]

Yes. Using calendar 1991, the last complete year of the Federal Railroad Administration's (FRA) accident statistics, there were 1,194 fatal injuries for 1991 in the industry. Of that total, 608 (50 percent) were in highway/rail accident/incidents. It is interesting to note that of the remaining 586 fatalities, 509 were trespassers.

Preliminary FRA accident statistics for 1992 show 522 fatal injuries received in rail-highway crossing accident/incidents as compared to 556 for the same period in 1991.

BRENNHAM, TEXAS, UNDERGROUND STORAGE SITE ACCIDENT

Mr. CARR. The Safety Board held a public hearing in Texas last year as part of an investigation into an explosion of a gas cloud released from an underground storage facility in Brenham, Texas, in which three people were killed and 23 injured.

What did you learn from this hearing and what is the status of your investigation?

[The information follows:]

Following the release of highly volatile liquids and explosions at Brenham, Texas, a hearing was held in July 1992, and additional depositions were taken in September 1992.

Information was gathered at the hearing regarding Seminole Pipeline Company's cavern operations and its response to the explosions, information on both liquid and natural gas pipeline industry organizations' recommended practices on underground storage operations, on Federal and state governments' regulation and oversight of cavern operations, and on previous accidents at underground storage sites.

This hearing made clear that there exists almost no governmental oversight of underground storage operations and only minimal pipeline industry guidance on the design, construction, and operation of these facilities. The hearing heightened the Safety Board's concern regarding this type of facility because nationwide there are about 1,000 such facilities used to store liquids, and about 500 used to store natural gas.

YARD LINE PIPELINE ACCIDENTS

Mr. CARR. In a 7-month period beginning September 16, 1988, you investigated five yard line accidents in the Kansas City/Topeka area. As you know, these are customer-owned pipelines that carry natural gas from the outlet side of a curb valve—usually at the property line—to the inlet side of the customer's residence or farm. The accidents killed four persons, injured 12, and destroyed several homes and automobiles.

How many yard line accidents/incidents has the Safety Board investigated in the last 5 years?

[The information follows:]

Since the Kansas Power and Light Company accidents, the Safety Board has investigated one other yard line accident. That accident occurred in Fulton, Missouri in January 7, 1988.

Mr. CARR. What causes have been cited for the accidents/incidents?

[The information follows:]

The Safety Board determined that the probable cause of the January 1988 accident in Fulton, Missouri, was corrosion in a 1.25-inch diameter buried steel pipe.

Mr. CARR. What trends, if any has the Safety Board noticed in terms of yard line fatalities, injuries, and property damage?

[The information follows:]

Based on the small number of accidents the Safety Board is able to investigate, it would not be possible to determine accident trends. There also exists no data sufficient to assess accident trends involving yard lines because the Research and Special Programs Administration collects no accident history on these portions of gas service lines.

YARD LINE PIPELINE RECOMMENDATIONS

Mr. CARR. What recommendations has the Safety Board made regarding yard lines?

[The information follows:]

As part of the Pipeline Accident Report—Kansas Power and Light Company Natural Gas Pipeline Accidents September 16, 1988 to March 29, 1989 the Safety Board issued the following recommendations regarding yard lines:

To the Kansas Power and Light Company: Extend, as applicable, the current programs for leak surveys, renewal of customer-owned portions of service lines and yard lines, and replacement of cast-iron pipe to its gas systems in the State of Oklahoma, (P-90-08)

To the Research and Special Programs Administration: Amend 49 CFR 192 to make buried lines used to transport natural gas from the outlet of a meter to a customer's building fuel lines subject to the Federal minimum pipeline safety requirements. (P-90-19)

Require, by a certain time, that existing buried, unprotected gas piping be protected against damage from corrosion or be replaced with piping resistant to corrosion damage. (P-90-20)

YARD LINE PIPELINE SAFETY

Mr. CARR. In the Safety Board's opinion, are Federal and/or State regulations needed governing the design, construction, maintenance, inspection, and safety of yard lines?

[The information follows:]

In the Safety Board's opinion, yard lines and customer-owned portions of service lines should be subject to 49 CFR Part 192—Minimum Standards for Natural Gas Pipelines. This was the intent of the Safety Board Recommendation P-90-19 which stated:

Amend 49 CFR 192 to make buried lines used to transport natural gas from the outlet of a meter to a customer's building fuel lines subject to the Federal minimum pipeline safety requirements.

Public Law 102-508 Section 115 requires the Secretary of Transportation to conduct a review of customer-owned natural gas service lines and to make recommendations for legislative or regulatory action. The Safety Board believes that this Congressional requirement will encourage the Research and Special Program Administration to implement recommendation P-90-19.

FORT BENJAMIN HARRISON PIPELINE ACCIDENT

Mr. CARR. In December 1990, a natural gas explosion and fire at Fort Benjamin Harrison, Indiana killed two persons and injured 24 others.

What are your findings in your investigation and what recommendations were made to the military services?

[The information follows:]

The Safety Board determined that the probable cause of the Fort Benjamin Harrison pipeline explosion in April 1992 was the failure of the Army to construct, maintain, and operate the Fort's gas distribution system in accordance with its own and

the industry's standards. The result was the inadvertent opening of a valve to a discontinued steel gas main that allowed natural gas to leak into a residential building where it ignited and exploded.

Eight safety recommendations were issued to the Secretary of the Army calling for operators to be trained and have qualifications; that gas pipeline systems conform to operations and maintenance requirements of 49 CFR Part 192, and that maps be updated. These eight safety recommendations have had favorable action by the Department of the Army.

One safety recommendation was issued to both the Secretaries of the Navy and the Air Force requesting that they: Evaluate the Navy/Air Force gas pipeline program to identify and correct any deficient design, construction, operation, and maintenance procedures, inspect Navy/Air Force gas pipeline systems to identify and correct any conditions that do not comply with Navy/Air Force gas pipeline system policies and practices; and, if necessary, implement a program for periodically assessing compliance at all command levels with Navy/Air Force gas pipeline safety policies and standards. (P-92-14 and P-92-15).

The Safety Board has not received a response from those Departments.

PIPELINE INTERNAL INSPECTION DEVICE

Mr. CARR. In November, RSPA issued a notice of proposed rulemaking requiring new and replacement hazardous liquid and natural gas pipelines be designed for the use of the so-called "smart pig" internal inspection device.

Does the proposed rulemaking address recommendations made previously by the Safety Board?

[The information follows:]

The Research and Special Projects Administration Notice of Proposed Rulemaking (NPRM) "Passage of Instrumented Internal Devices," Docket PS-126, partially addresses the recommendation of the Safety Board. The NPRM required only that the pipe configuration be suitable for using internal inspection equipment, but did not include any requirement that pipeline operators install facilities to enter and remove from the pipeline the internal inspection devices. The Board advised in its comments to RSPA's NPRM that RSPA should require operators to install equipment to enable them to enter and remove from a pipeline internal inspection equipment otherwise there would likely be little or no use of the available technology.

FISHING VESSEL SAFETY

Mr. CARR. How long has fishing vessel safety remained on the Safety Board's "Most Wanted" list?

[The information follows:]

Fishing vessel safety has been on the "Most Wanted" list since the list was adopted, October 10, 1990.

Mr. CARR. What has the Coast Guard done to implement the Commercial Fishing Vessel Safety Act of 1988, particularly regarding the licensing and certification of commercial fishing vessels?

[The information follows:]

The Coast Guard addressed this issue in a notice of proposed rulemaking, Commercial Fishing Industry Vessel Regulations in 1990, and a Supplemental Notice of Proposed Rulemaking in 1992. The Safety Board commented on this matter on August 20, 1990, December 8, 1992, and February 24, 1993. The Coast Guard has submitted a plan for the licensing of fishing vessel masters to the U.S. Congress which generally met with the approval of the Safety Board.

Mr. CARR. Are you satisfied with the Coast Guard's response to date?

[The information follows:]

The regulations promulgated by the Coast Guard as a result of the Commercial Fishing Industry Vessel Safety Act of 1988 became effective on September 15, 1991.

These regulations mandated safety, survival and fire fighting equipment improvements. This work was accomplished fairly expeditiously.

The Coast Guard's initiative to address licensing of fishermen and inspection of fishing vessels has moved at a much slower pace. Licensing and inspection are very sensitive issues and there have been a lot of discussions both internally within the Coast Guard and externally between the Coast Guard and industry representatives. The Safety Board would have liked to have seen the process of plan development progress faster than it did, but considering the nature of the issues, it is understandable that it has taken as long as it has to complete.

The Coast Guard's licensing and vessel inspection plans have both been submitted to Congress. The Coast Guard, the fishing industry, and the Safety Board are awaiting Congressional action on these issues.

DOT AGENCY RECOMMENDATION ACCEPTANCE RATES

Mr. CARR. Do you believe the Safety Board should change the way you deal with the operating agencies within the Department of Transportation, particularly those, such as the Coast Guard, that historically have had a lower acceptance rate of your recommendations?

[The information follows:]

The Safety Board has over the last four years implemented a change in our interaction with the Department of Transportation modal administrations. The process continues to evolve. It includes such parameters as more face-to-face contact on safety recommendations and in follow-up efforts. The Chairman meets with the various modal administrators, and there are staff level meetings at least three times a year with each of the modal administrators to discuss all open status safety recommendations. Meetings are held as needed to discuss recommendations that may be posing a problem within an administration.

The Board's relationship with the Coast Guard is now undergoing the process outlined above. We are meeting more often, at both the Chairman's level and at the staff level, and there is more communication between the agencies. We are watching these developments with the Coast Guard very closely and we are anticipating positive benefits during the next nine months to a year.

CRUISE SHIP INVESTIGATIONS

Mr. CARR. In October 1989, International Maritime Organization Resolution A.637(16) endorsed greater multilateral cooperation in vessel casualty investigations, including cruise ships. Since then the United States Coast Guard has participated in several investigations of foreign flagged cruise ship accidents, i.e., the April 1992 investigation of the Starship Majestic, including at least one investigation which included Safety Board representatives. The Safety Board has expressed concern for several years about your lack of jurisdiction to investigate off-shore cruise ship accidents.

Have these joint investigations been successful?

[The information follows:]

Currently, the Safety Board and the Coast Guard are working closely to cooperate in accident investigations involving foreign passenger ships operating from U.S. ports.

The Safety Board has had full opportunity to participate in these investigations. The last three investigations that the Board has undertaken of foreign flag passenger vessel accidents were: 1. Fire on board BRITANIS on 12/11/91; 2. Fire on board SONG OF AMERICA on 12/12/91; and 3. Grounding of QUEEN ELIZABETH 2 on 8/7/92.

All three of these investigations were conducted jointly with the Coast Guard, and were adequate for the needs of the Board to fulfill its mandate and to protect cruise ship passengers.

In the past, the Safety Board sought the authority to conduct investigations of foreign passenger ships operating from U.S. ports, but the Congress, instead, gave the

authority to the Coast Guard. We are presently evaluating the Coast Guard's implementation of this authority before making any additional requests.

CRUISE SHIP SAFETY

Mr. CARR. In April 1992, the IMO required existing, primarily older, cruise ships to install fire sprinklers and other fire safety equipment. Other standards affecting passenger safety, such as crew proficiency in carrying out fire drills, have not yet been revised.

Are there other types of cruise ship safety concerns that the Safety Board believes have not been sufficiently addressed?

[The information follows:]

The Safety Board has had difficulty convincing the Coast Guard of the need to propose at the IMO the following: Periodic marine firefighting training for ships officers; certification by the flag state that all crewmembers with firefighting responsibilities attend a practical firefighter course; that all passenger ships carrying more than 500 passengers have a full-time professional firefighter position; and the need for SOLAS requirements for fire and boat drills or comprehensive safety briefings on vessels that are engaged on short runs.

VESSEL CASUALTY REPORTING

Mr. CARR. The Safety Board has expressed concern about the lack of reporting of vessel casualties to the IMO. In contrast, the international airline industry, through accident investigation and reporting procedures required by ICAO, has established more stringent accident investigation and reporting requirements.

What steps are foreign governments taking to provide IMO with more complete reporting of vessel casualties?

[The information follows:]

Foreign governments are not taking the needed steps to provide the IMO with accurate reports on vessel casualties. In the latest reports from committee meetings at the IMO, it appears that there are only a few foreign governments that are regularly submitting accurate casualty reports. The reports submitted are, for the most part, from governments that have formal marine accident investigation procedures.

Mr. CARR. What additional steps can or should the United States take to improve the reporting of vessel casualties to IMO?

[The information follows:]

The Coast Guard should be firm and insist that those member governments abide by the rules set forth in the IMO regulations and investigate vessel casualties and submit accident reports to the IMO, or that the Coast Guard and the Safety Board be permitted to conduct the investigations so that casualty information can be documented and shared by the member nations to prevent similar accidents from occurring.

ICAO AND IMO INVESTIGATIONS

Mr. CARR. What similarities and differences exist between how ICAO and IMO investigate and report the results of aviation and maritime accidents respectively?

[The information follows:]

Both ICAO and IMO are United Nations agencies, with international agreements between the member Nations to investigate accidents and issue reports. The ICAO agreements are such that most if not all aviation accidents are investigated, and reports of those investigations are issued. Although IMO has a similar arrangement for maritime accident investigation and reporting, its member Nations have not historically conducted such investigations or issued such reports. Along with the other

major maritime Nations, the U.S. is working through the IMO to encourage the IMO to comply with the existing agreements.

RAIL TRANSIT SAFETY

Mr. CARR. What progress have we made in improving the safety of our Nation's transit systems?

[The information follows:]

In the past, progress on transit system safety has traditionally been on a case-by-case, system-by-system basis. Rapid rail transit improvements had often been made only after Safety Board investigations of site specific accidents.

During peak operating hours, one rail transit train can carry as many as 1,000 to 1,500 passengers and consequently, the Safety Board is concerned that an accident could result in a catastrophic loss of life in the event of a collision.

The Safety Board is encouraged, however, that a more systematic approach will be taken to deal with transit safety than has been in the past. With the enactment of a law calling on the Federal Transit Administration (FTA) to issue a rule requiring states to oversee the safety of rail fixed guideway public transportation systems more comprehensive safety initiatives are expected. FTA issued an ANPRM and the Safety Board urged that it be changed in several vital areas in order to insure that the goal of effective state oversight of rapid rail is met.

AUTOMATIC TRAIN CONTROL

Mr. CARR. Are there any newer automatic train control system technologies in existence today which could affect human error accidents in rail transportation?

[The information follows:]

Yes. Technologies exist as part of the industry's Advanced Train Control System (ATCS) which was developed under the auspices of the Association of American Railroads (AAR) by various freight railroads and others in the industry. ATCS can provide Positive Train Separation, an issue on the Safety Board's Most Wanted List, if the system is implemented throughout the rail industry.

Mr. CARR. Has this technology been accepted by the railroad industry, and are there any plans to implement it around the country?

[The information follows:]

Yes. Specification for the Advanced Train Control System (ATCS) has been completed and certain segments are being employed in the rail industry today. The NTSB has seen demonstrations of some of the major control system pieces of ATCS developed by Burlington Northern. Other railroads are currently using ATCS for a variety of tasks including work order reporting, locomotive performance monitoring and in some cases, track force equipment management.

Final decisions on implementing ATCS nationwide will be dependent on a variety of factors, including cost considerations and the difficulties of adopting a standardized procedure for all railroads. The Safety Board understands these factors will be discussed at the April 16, 1993 Association of American Railroads (AAR) board meeting.

Mr. CARR. What role does the Safety Board intend to play in this effort?

[The information follows:]

The Safety Board will continue to follow up on safety recommendations issued to the Federal Railroad Administration and the railroad industry to implement Positive Train Separation, and supporting measures to improve railroad safety.

AUTOMATIC TRAIN CONTROL—BURLINGTON NORTHERN TECHNOLOGY

Mr. CARR. In 1992, Amtrak, in association with the Burlington Northern Railroad, brought a high technology locomotive to Washington. At that time, they were discussing application of ATCS

technology across an area of both railroads. Amtrak discussed this in our hearings last year, and once again yesterday in our hearing on high speed rail.

Would that technology be applicable to this problem?

[The information follows:]

Last year, the Chairman of Amtrak discussed a pilot program using the technologies (Advanced Railroad Electronic System, ARES) developed by Burlington Northern. Since that time, Burlington Northern has dropped ARES in favor of the standardized approach being developed through ATCS. A pilot program testing train control system advances would be beneficial.

AUTOMATIC TRAIN CONTROL ON HIGH SPEED RAIL

Mr. CARR. To what extent would ATCS technology have application to high speed rail activity being discussed by Amtrak and various State groups?

[The information follows:]

The technologies associated with ATCS represent the latest strides in train control. Many of them have direct application to the high speed rail industry, particularly for high speed trains which operate along existing freight railroad tracks or other commuter rail service.

AUTOMATIC TRAIN CONTROL ON TRANSIT SYSTEMS

Mr. CARR. Would this technology also be applicable to commuter and transit systems that serve our major cities?

[The information follows:]

ATCS technology can be used in any type of rail operation. However, the requirements for transit and some commuter systems are less stringent under the Federal Transit Administration than they would be under the Federal Railroad Administration. Many transit systems already have systems that provide Positive Train Separation, such as the Washington Metropolitan Transit Authority. Many of the commuter systems cannot as yet employ ATCS because of the expense and the lack of technology to facilitate their electrical propulsion requirements.

CLOSING REMARKS

Mr. CARR. We will see you back in mid-April.

You're a great agency. You do good work. We are always pleased to have you with us.

Mr. VOGT. Thank you very much.

Mr. CARR. This concludes our hearing today.

MONDAY, APRIL 19, 1993.

NATIONAL TRANSPORTATION SAFETY BOARD

WITNESSES

CARL W. VOGT, CHAIRMAN

TERRY BAXTER, MANAGING DIRECTOR

CRAIG E. KELLER, SR., COMPTROLLER

OPENING REMARKS

Mr. CARR. This morning we are going to receive testimony on the fiscal year 1994 budget request for the NTSB. Our principal witness will be the Chairman, Carl Vogt. Nice to see you. We are glad to have you here.

We might point out that we earlier had a hearing in which we discussed the reports and safety investigations of the NTSB. Today's hearing is largely devoted to the budget request. We will, of course, put your statement in its entirety in the record and ask that you summarize it.

STATEMENT OF CARL VOGT

NTSB BUDGET REQUEST

Mr. VOGT. Fine. Thank you.

Good morning. We greatly appreciate the opportunity again to be here to discuss our budget. At the table with me this morning is our Managing Director, Mr. Terry Baxter on my left; on your right, our Comptroller, Mr. Craig Keller, who have all the answers for anything you can possibly think about on our budget.

For the fiscal year 1994 the Safety Board is requesting \$37,125,000 and 348 full-time equivalent positions. This represents an overall increase in funding of \$1,125,000 to cover uncontrollable and inflationary expenses over our 1993 budget. The requested staffing level is a decrease of nine FTEs from the fiscal year 1993 funding level and represents the first installment of the Safety Board's share of the 4 percent across-the-board reduction in Federal employee positions proposed by the President.

Like other governmental agencies and bureaus, the Safety Board supports the President's desire to make government operations more effective and efficient. The Safety Board also endorses the administration's policy of streamlining agency operations, reducing administrative expenses, and improving the delivery of services to the public.

Despite this support, the new round of staffing level cuts will have an impact on the Safety Board as a whole. However, the Safety Board believes that proper monitoring of our human resources should enable the absorption of the proposed cuts through attrition.

Mr. Chairman, we are going to do our part to make the necessary sacrifices in support of the efforts of the President, the administration and the Congress to streamline government. We will make every effort to minimize the impact of these reductions on employees and on our ability to perform our very vital accident investigation and safety promotion functions.

We will also continue to manage our assets as efficiently and effectively as possible to respond to the existing transportation challenges.

The Safety Board will continue to operate, and I emphasize this, on a 24-hours-a-day, seven-days-a-week, 12-months-a-year basis in order to investigate transportation accidents. We anticipate that there will be a rising challenge in transportation in the 21st Century.

As we discussed last time when we were here, there is an ever increasing level of the use of our transportation system, and unfortunately we anticipate that there will be more accidents in the future in spite of an accomplishment by our community as a whole in reducing accidents in every mode. We would be pleased to answer your questions about our 1994 budget proposal.

[The prepared statement of Carl Vogt follows:]



**National
Transportation
Safety Board**

Washington, D.C. 20594

Safety Information

Testimony of
Carl W. Vogt, Chairman
National Transportation Safety Board
Before the
Committee on Appropriations
Subcommittee on Transportation and Related Agencies
House of Representatives
Regarding
Fiscal Year 1994 Budget Request

April 19, 1993

Good morning Chairman Carr and members of the Subcommittee. I appreciate the opportunity to testify before you on the National Transportation Safety Board's 1994 budget request.

For fiscal year 1994, the Safety Board is requesting \$37,125,000 and 348 full-time-equivalent (FTE) positions. This represents an overall increase in funding of \$1,125,000 to cover uncontrollable inflationary expenses. The requested staffing level is a decrease of nine FTEs from the fiscal year 1993 funding level and represents the first installment of the Safety Board's share of the four percent across-the-board reduction in Federal employee positions proposed by the President.

Like other governmental agencies and bureaus, the Safety Board supports the President's desire to make government operations more effective and efficient. The Safety Board also endorses the Administration's policy of streamlining agency operations, reducing administrative expenses, and improving the delivery of services to the public.

Despite this support, the new round of staffing level cuts will have an impact on the Safety Board as a whole. However, the Safety Board believes that proper monitoring of our human resources should enable the absorption of the proposed cuts through attrition.

Mr. Chairman, the Safety Board will do its part to make the necessary sacrifices in support of the efforts of the President and the Congress to streamline government. Every effort will be made to minimize the impact of any reductions on employees and on the Safety Board's ability to perform our vital accident investigation and safety promotion function.

The Safety Board will also continue to manage our assets as efficiently and effectively as possible in order to respond to existing transportation challenges.

The Safety Board will moreover continue to maximize our resources in order to meet the rising transportation challenges of the 21st century.

And the Safety Board will continue to operate on a 24 hours a day, 7 days a week, 12 months a year basis in order to investigate transportation accidents or incidents.

Thank you Mr. Chairman, and I would be pleased to answer any questions about the fiscal year 1994 budget request.

CARL W. VOGT
Chairman

Carl W. Vogt became a member and chairman of the National Transportation Safety Board on June 23, 1992. Mr. Vogt is the seventh chairman in the history of the 25-year old Safety Board.

Mr. Vogt, a native of Houston, Texas, was managing partner of the Washington office of Fulbright & Jaworski, a Texas-based law firm. He also was a member of the board of the National Railroad Passenger Corporation (Amtrak) and served on the Federal Aviation Administration's Aviation System Capacity Advisory Committee.

After graduating in 1958 from Williams College where he was a member of the Senior Honors Society, Mr. Vogt served in the U.S. Marine Corps as a jet fighter pilot. He served one tour of duty aboard the aircraft carrier USS Lexington. In 1965 Mr. Vogt earned his law degree from the University of Texas. As an attorney, Mr. Vogt has specialized in general civil litigation and administrative law matters.

Active in professional and community affairs, Mr. Vogt has held positions with the American Bar Association, the National Association of College and University Attorneys, the U.S. Chamber of Commerce, the Greater Washington Board of Trade, the 1991 Greater Washington United Way Campaign and is a Fellow of the American Bar Foundation. He also was a founding trustee of the Chiquapin School for underprivileged boys in Highlands, Texas.

Mr. Vogt is the holder of a commercial pilot's license and is an active sailor. He is married and has two daughters.

Mr. Vogt's current term on the National Transportation Safety Board expires December 31, 1996; he is serving a two-year term as chairman.

**BIOGRAPHICAL NOTES ON STAFF WITNESSES
NATIONAL TRANSPORTATION SAFETY BOARD****Terry L. Baxter, Managing Director, ES-6**

b. 1945; BA, U. of Maryland; 1972 - 1986: GEICO Corporation (beginning with audio-visual/television specialist and ending as Vice President, Employee Relations); 1986 - 1988: freelance writer; 1988 - 1989: Assistant Director for Public Affairs, OMB; 1989 - 1990: Senior Vice President, National Bank of Washington; April 1990 - present, Managing Director, NTSB.

Craig E. Keller, Sr., Comptroller, GM-15

b. 1954; AA, Accounting, Catonsville Community College, Baltimore, MD; BS, Accounting, University of Baltimore, Baltimore, Md.; MBA, Business Administration, Strayer College, District of Columbia; 1977-1979: Accounting Technician, U.S. Coast Guard; 1979-1981: Administrative Assistant, Federal Highway Administration; 1981-1982: systems Accountant, Federal Highway Administration; 1982-1983: Operating Accountant, Federal labor Relations Authority; 1983-1984: Systems Accountant/Auditor, NTSB; 1984-1986: Accounting Officer, NTSB; 1986-1987: Assistant Comptroller, NTSB; 1987: Systems Accountant, Defense Nuclear Agency; 1987-1990: Assistant Financial Manager, NTSB; 1991-Present: Comptroller, NTSB.

FLORIDA BOATING ACCIDENT

Mr. CARR. Thank you very much, Chairman Vogt.

Before we get into the budget justifications, I would like an update on some recent developments since our previous hearing. The press accounts of the recent boating accident involving three members of the Cleveland Indians baseball team indicated that State of Florida authorities did not allow the NTSB to participate in their investigation. Can you give us some details on that situation?

Mr. VOGT. Yes, sir. We were not attempting to investigate that specification, so the question of our jurisdiction versus theirs really never came to a head. We sent one of our senior investigators because, as you know, we came out just last week with a study on recreational boating. We wanted to get information on the accident because it was pertinent to that study. So we wanted to view the scene and obtain background information. We were told by the Fish and Wildlife Authority, which had jurisdiction in Florida over the investigation, that our investigators would be allowed to view the accident site but not to photograph it nor to participate actively in the investigation. In their view, it was or it had the prospects of being a criminal investigation, and they were proceeding on that basis.

Our investigator did view the site, but left on another assignment. We subsequently submitted an extensive list of questions to the Florida authorities and promptly got complete responses. So our purposes were served with the information we obtained.

On the broader question of jurisdiction, and I think had we asserted ourselves, they indicated that they would have resisted. We believe that our statutory authority gives us preemptive rights over State authority even in criminal investigations. This has never been tested in court. There was a similar case in California several years ago in which the Attorney General of the State of California affirmed the NTSB view that our authority was preemptive.

As a general proposition, we have had excellent cooperation with State authorities in investigations, and I think the reason this has never been tested is that it has just never become a confrontational issue. It might have in this case, but we were really not interested in asserting our jurisdiction to investigate this accident as the primary investigator.

Mr. CARR. Now, we are talking about the Florida fish and wildlife people, not Federal personnel?

Mr. VOGT. Yes.

Mr. CARR. What possible conflicts could there be between a criminal investigation and your safety investigation?

Mr. VOGT. Well, I think just as a fundamental matter, we ran into it at LaGuardia in an aircraft accident, although when we discussed it with them they backed off on it is the confidentiality of the criminal, the materials in a criminal investigation since their concern was that anything we obtained would be subject to public disclosure, which is not the case. We have confidentiality in our investigation materials until we make them public. So there really isn't a conflict, but from the State point of view it was their perception that there would be a conflict. Again, since we weren't inter-

ested in any more than they were willing to give us, it never really came to a head.

Mr. CARR. Were you able to have conversations with higher authorities in Tallahassee about that point so that if you ever get into a similar situation they don't feel as though they have established a precedent?

Mr. VOGT. A letter will go out tomorrow from our general counsel to the Florida authorities stating in complete detail our position on jurisdiction, and that, we hope, will result in some further discussions. We will be glad to copy you on that letter, but it will set forth our case for preemptive jurisdiction and then we will look for their response. We would like to establish that for future reference.

Mr. CARR. Well, I am not interested in receiving a copy of the letter. I am just interested that we get the job done. Your jurisdiction and the prerogatives of your jurisdiction are very important. The fact that you weren't interested in a particular accident investigation shouldn't be used in subsequent accident investigations. These State authorities have a tendency to talk to one another. I am sure that you don't want to establish any folklore out there that will cause you trouble in some other State.

Mr. VOGT. No, you are absolutely right, and we are acutely aware of that, and the purpose of this letter is to set that record straight.

ACCIDENT INVESTIGATION JURISDICTION

Mr. CARR. Could you clarify your jurisdiction in recreational boating accidents. I would have to say there is a threshold here. There are a lot of devices and vehicles that can be used recreationally and also for serious transportation, but their primary purpose is recreational. From the title of your agency, it would appear that your jurisdiction would be not only aimed at, but perhaps exclusively devoted to, serious transportation as opposed to bicycle accidents and hang glider accidents that are really recreational in nature.

What is your statutory jurisdiction to investigate?

Mr. VOGT. Well, the statute has more or less of a catch-all provision that refers—and I don't have the specific language at hand—to accidents involving substantial questions of public safety that give us that broad jurisdiction. It really is a catch-all phrase. The question you have posed is exactly the one I posed to our general counsel a few days ago and we have done a considerable amount of research on the provision.

I am convinced that the broad provision is in our statute so that we can investigate accidents of this nature. Now, this one would have been a very good test case because it occurred on a private lake, and it was not a navigable waterway in a general sense, so there are some good issues there. Our general counsel feels very confident that this falls within the catch-all provisions of the statute and that we do, indeed, have jurisdiction.

Mr. CARR. Does anybody here have that catch-all provision—that section of the statute? I know that you folks bring a lot of material here with you.

Mr. VOGT. We have it at the table. This is Section 304-a(F). It says "other accident(s) which occur in connection with the transportation of people or property which, in the judgment of the Board is catastrophic, involves problems of a recurring character, or would otherwise carry out the policy of this title."

SAFETY STUDIES RESOURCES

Mr. CARR. Thank you. I think it is important to put it in the record. The discussion really should be around the question of resources. If you have plenty of resources absent major aircraft, ship, and train accidents, then you have excess resources to go after safety problems like boating, not that the work you are doing on boating is unhelpful. It is just a matter of resources. If you have the resources to investigate recreational accidents, you apparently have the legal authority to conduct such investigations. How much of the entire agency's work is in what I would term, not in a pejorative sense, on the periphery of what your core charter is?

Mr. VOGT. Well, our safety studies budget is relatively small compared to our total budget. About 65 percent of our budget is devoted to aviation and the vast majority of that is to accident investigation. Overall, 72 percent of our budget is allocated for accident investigations. We do do safety studies. This year two that have gotten notice concern teenage drinking and driving and alcohol, and recreational boating.

I hesitate to characterize recreational boating as peripheral because it is second only to highway accidents in the number of fatalities every year. It is way behind, but there are more recreational boating fatalities than there are in all of domestic aviation, general as well as transport category. In 1991, 924 people died in recreational boating activities. So if you look at it in the context of what we do and where the dangers are, this is a fairly major source of danger to the public.

Now, we don't spend time or money investigating boating accidents because they are done primarily by State authorities, and the Florida case was a good example where we didn't want to dedicate resources to the actual investigation, but we wanted the accident information. The cost of a safety study such as was done on recreational boating which took some ten months to put together, is very minimal. Yet I think well done safety studies like this one can have an enormous impact, and it is a big bang for the buck, a force multiplier on our mission. If we choose them carefully, which we do, they can have a terrific impact at a relatively small cost.

Mr. CARR. Well, to underscore my earlier statement, I said not peripheral in the pejorative sense. My comment was from the common understanding of most average taxpayers that the NTSB is about investigating accidents, principally in common carriage.

Mr. VOGT. Correct.

Mr. CARR. Not individual transportation and, indeed, not motor vehicle transportation. We have the NHTSA with its core responsibility to ensure the safety of motor vehicles. It would be interesting actually—you say 600—

Mr. VOGT. I think 924 is the exact recreational boating fatality figure for 1991.

Mr. CARR. How many aircraft fatalities did we have?

Mr. VOGT. Nine hundred thirty-three I believe.

Mr. CARR. And that is across commercial and general aviation?

Mr. VOGT. Yes, and, of course, that varies if you have a large 121 carrier that goes down with a lot of people, but those are the numbers.

Mr. CARR. To make your point about boating, it would seem that the dollars per fatality exposure would be significantly in favor of the NTSB reviewing boating safety, like you say—a big bang for the buck.

Mr. VOGT. Yes. Hopefully, our study will have some impact. Mainly it is State jurisdiction and so what we are trying to do is encourage States to focus in on what we perceive as a problem and one needed some attention. The boating industry is certainly aware of it and concerned about it.

RECREATIONAL BOATING SAFETY STUDY

Mr. CARR. Speaking of your study, apparently it dealt with only 1991 data. That database is pretty limited.

Mr. VOGT. That was our problem. The thrust of our recommendations was the creation of a better database. We took Coast Guard figures for 1991 and found that those were insufficient. We next examined figures from 18 States, which comprised about 52 percent of the fatal accidents and 52 percent of the fatalities for the year, so our database was just about half of the total.

The database was sufficient to draw some conclusions, but not as sufficient as we want. It was particularly deficient in one respect, and that is some 76 percent of the fatalities were not chemically tested for alcohol or drugs. Of the fatalities that were tested, 75 percent of those had alcohol involvement. So we calculated, and again it was a rough calculation, that 37 percent of all boating accidents had alcohol involvement, and the figure could go up into the 70s if all fatalities were chemically tested for alcohol and drugs, leading us to conclude that there was a problem with alcohol.

The use of personal flotation devices was something that was not difficult to gather out of the database we had. The database showed that 75 percent of the people who drowned in those boating accidents were not using personal flotation devices. It is estimated that as many as 85 percent of those who did drown, could have been saved if they had been wearing the devices. So we have confidence in our general conclusions in spite of a limited database. Likewise, it was clear that very few people who boat take any kind of formal safety instruction.

I personally have been sailing on the Chesapeake for 20 years. So the statistics make a lot of sense just on the basis of my own personal experience. The thrust of our recommendations is that States establish requirements for toxicological and chemical testing in fatal accidents, not only of the victims but of the operators as well. For example, in the Florida accident we apparently had an operator with a .14 blood alcohol level, .10 is the legal limit in Florida, and a person who was familiar with the lake and the pier and with the boat. It seems to have direct alcohol involvement. I think our recommendations are solid, and I think they draw attention to an

area that needs some attention because you just can't kill that many people a year and have 20 million boats in the country.

Ten years ago in Florida it was estimated there were 50,000 boats that would go over 50 miles an hour. Now, there are half a million recreational boats in Florida that will exceed 50 miles an hour. So you are talking about some fairly high speed operations on the water.

RECREATIONAL BOATING ACCIDENT DATA

Mr. CARR. This is an area that concerns people from my State. People don't realize that Michigan has more registered boaters than any other State in the Nation. The first State you logically think about is Florida, Alaska or California. Michigan's coastline is largely concealed because it is an interior coastline, but it is a lot longer than the coastline of most of those States. We have a richness of interior lakes as well, and boating safety is a real problem in Michigan. Some States have very little water. I am wondering if those fatalities and those accidents are not spread evenly across the country.

Do we need a better database? Do we need to have some statutory—I hate to use the word—"mandates"? Do we need coordination among States to get them voluntarily to begin compiling the data that we could base policy actions upon?

Mr. VOGT. Unless something like that is done the database will continue to be spotty. Because the 18 States didn't have uniform rules, we got good information from some and from others it was questionable. In some States there were mandatory and determinative blood alcohol levels, and there was testing. In others there wasn't. So unless something is done, I think we will continue to get spotty data.

And as you point out, every State is different, and that was one of the issues in our report. What may be a good law in California is not necessarily applicable to Oklahoma. It must be State specific in terms of the extent to which a given State will want to regulate recreational boating. But without the database there is no way to really evaluate the hazards.

Mr. CARR. Mr. Wolf.

RECREATIONAL BOATING ACCIDENTS AS A RESULT OF ALCOHOL USE

Mr. WOLF. Thank you. Thank you, Mr. Chairman.

Welcome to the hearing. I have a couple of other questions, but let me follow up what the Chairman was asking. Are most of the boating accidents caused by alcohol?

Mr. VOGT. Well, we found, and again, we are discussing a database which covered only about half of the accidents that occurred in 1991, that of the fatal accidents where there was toxicological and chemical testing of the victims, 75 percent tested positive for alcohol.

Mr. WOLF. Seventy-five percent.

Mr. VOGT. Of those that were tested. But that was only about a quarter of the fatal accidents.

Mr. WOLF. But there must be someplace—is there any State that tests extensively?

Mr. VOGT. We are fairly confident, Congressman, that at least 37 percent of the total were alcohol involved and probably a much higher level.

Mr. WOLF. So perhaps 50 percent?

Mr. VOGT. Well, it is a speculation, but I would speculate at least 50 percent, probably higher.

Mr. WOLF. So you really have an alcohol problem as much as a boating problem?

Mr. VOGT. We think so.

Mr. WOLF. And the same with driving?

Mr. VOGT. Correct.

DANFORTH LEGISLATION

Mr. WOLF. I am introducing later this week a bill introduced in the Senate by Senator Danforth. Have you taken a look at Danforth's bill?

Instead of a sanction program, it is an incentive program funded at \$100 million over five years to encourage States to implement a number of things, provisional licensing, .02 blood alcohol content for drivers under 21, belt usage program, \$500 minimum penalty for selling alcohol to a minor, use and lose license revocation for alcohol offenses by minors, and a study with regard to older drivers.

If you would take a look at this and reply. Do you have to get your approval through OMB?

Mr. VOGT. No.

Mr. WOLF. If you could just give us some general reactions.

Mr. VOGT. We will certainly do that. I am familiar with the effort. I haven't seen the details of the bill, but it is very much in line with our recommendations.

Mr. WOLF. Well, I think it will be, and I would just be interested to know what your opinions are, what you think of it after you look at it.

We had a major accident, as you know, out in Northern Virginia. The family is a good friend of ours, and it has had an impact. They did identify the beer distributor in the District of Columbia that sold the keg of beer to a teenager.

COLONIAL PIPELINE ACCIDENT

Mr. WOLF. Let me ask you a couple of questions about pipelines. It is on the news today that Colonial is out trying to take another piece of pipe out to find out what happened. Do you have any preliminary leads on the causes of pipeline rupture?

Mr. VOGT. We don't, Congressman. We have, as I think you know, an 18-foot section of the pipe and a smaller section. We are actively pursuing an analysis of the striations in the rupture. We are making a two-pronged effort. One is the analysis of the metal, and I would certainly invite you over to see some of this under the microscope. It is a fascinating undertaking. I am not a metallurgist, but it is very interesting and the analysis will enable some conclusions to be made.

Mr. WOLF. When do you think that will be, because I spoke to your metallurgist the day I was out there and he thought he would

have some preliminary data the next day or later that afternoon. That has been several weeks ago. When do you think you will have something? I am a layman and I don't know very much about it, but the pipe was obviously scarred by a heavy piece of equipment that was dragged across it, perhaps rocks in back of a back hoe.

Mr. VOGT. I asked them that question when I looked at the pipes. The other part of what we are trying to do that will make those conclusions really meaningful is to analyze the pressure cycles that Colonial put into the pipe, and Colonial has been very cooperative. We will analyze the data and correlate the pressures cycles with the condition of the pipe.

Now, there are marks that look like they are the products of boulders in the soil. One in particular is at the bottom of the 18-foot pipe, but I am talking also about the striations on the top where the rupture was. If we can get the pressure cycles and compare them to what is considered to be the weakness of the pipe which resulted from the impacts, then an approximate time of the impacts can be established. The third prong of the investigation—

Mr. WOLF. You will conclusively be able to show when that took place?

Mr. VOGT. It depends on the quality of the cycle data that we get.

The third aspect of it is our investigation which is ongoing right now, is to locate excavation and utility company permits that should indicate who was digging and in what area at any given time. We hope that we can come up with an approximate time when the impacts occurred and who had authority to dig.

COLONIAL PIPELINE ACCIDENT

Mr. WOLF. Now, the pipe that I saw looked like the damage had taken place at the top of the pipe.

Mr. VOGT. Yes, that is correct. It looked like a back hoe or something had done it.

Mr. WOLF. Is there also indication that there is damage on the bottom of the pipe?

Mr. VOGT. There is a dent on the bottom of one. It appears as if the pipe was sitting on a boulder of some kind, and there were rocks or boulders in the backfill around the pipe. But I am told that none could have had the kind of longitudinal force on the pipe because the ground just wasn't moving to that degree.

It also looks as if it may not have been a back hoe because there is only a single line. The three marks you normally get from a back hoe or something similar are not present. My concern, and the concern of our people, is that the cycle information may not be precise enough to finally draw a conclusion. By the end of this month we may have some preliminary data.

Mr. WOLF. Will you hold a press conference or make that available? I have been sort of waiting and holding off until you all have made your findings.

Mr. VOGT. Well, we will certainly let you know what we have as soon as we have got it, and then determine where to go from there. It is unlikely we would hold a press conference at that point in the investigation.

Mr. WOLF. But will the information be released to the public?

Mr. VOGT. When we complete our factual investigation, then that would be public.

Mr. WOLF. Does NTSB have somebody out there today? Colonial is looking to excavate another section of the pipe.

Mr. VOGT. Yes, we do.

Mr. WOLF. You do have somebody? You can let us know, if that is helpful, based on what they see today. Obviously Colonial is trying to prove one thing, that they were not negligent, so if you could let us know what that shows today when they excavate that segment of the pipe.

Mr. VOGT. As you know, we try to stay out of the liability end of the thing, but we are going in the same direction to try and find out what caused it, yes.

USE OF SMART PIGS

Mr. WOLF. Okay. Another question. People have indicated that the so-called "smart pigs" can detect corrosion and other defects and that they would clearly have prevented this spill. Do you have any comments about that?

Mr. VOGT. Well, I think Colonial used some smart pigs back in 1989, and we have requested their findings, the data that came from the use of those pigs. We have recommended over the years the use of those kinds of devices, and I think this new Pipeline Safety Act of 1992 also makes provisions for that. I am not qualified to say whether it would have shown precisely the problem in this pipe, and that is one of the things that we are looking into. Whether or not there was corrosion internally at that point that could have been detected as distinguished from corrosion working its way down from the outside and the extent to which these devices measure the thickness and the integrity of the material at any given point is beyond my ken, but that is certainly something that our staff is seeking from Colonial, and we are interested in it.

We have also made specific recommendations which support the use of those kinds of devices.

PIPELINE INSPECTIONS

Mr. WOLF. You had recommended in 1987 that the Research and Special Programs Administration, RSPA, require pipeline inspections with these. Is there such a regulation?

Mr. VOGT. I think it is a part of the new Pipeline Safety Act. George?

Mr. REAGLE. Well, Mr. Wolf, it is not required yet. There is a rulemaking out that covers highly volatile liquids that we have responded to. I don't know that there is a rulemaking out that would cover all pipelines.

Mr. WOLF. Was your recommendation to cover all pipelines?

Mr. REAGLE. Well, they specifically asked about—they had certain parameters and we responded with respect to highly volatile that we did want instrumented pigs.

Mr. WOLF. Would it make sense to have it in all pipelines? Have you made any recommendations concerning oil, gas?

Mr. REAGLE. Not necessarily.

Mr. WOLF. It wouldn't make sense?

Mr. REAGLE. I don't think so for all. I don't think categorically you would want to say all. I think we would have to look at the accidents we have had and look at where such information might be helpful in defining a problem before it occurs.

Mr. WOLF. Well, Colonial has had four in Virginia the last couple years. And I am not suggesting that they have done something bad. Do you know if these instrumented devices have been used in the largest accidents nationwide and whether they made a difference?

Mr. REAGLE. No, I would be glad to look into it.

Mr. WOLF. If you could because people have said that these are the solution to the problem, and how do they actually work? Do they work in fluid or do they work in the pipeline?

Mr. REAGLE. They work in fluid. There are many different kinds that get different parameters of data. I think there are four or five different kinds.

Mr. WOLF. Is it an x-ray type device?

Mr. LOEB. It is an instrument, a device that is placed into the pipeline when it has liquid in it so you have to have an apparatus so you can get into it. Under pressure it goes down the line. It senses the wall thickness, it can pick up whether there is corrosion or not through electronic and chemical processes that are in the instrumented system. It will pick up, if there is a thinning of the wall or if there is corrosion. But if you just have external damage to the pipeline it may not pick that up at all.

Mr. WOLF. You have had examples where pipelines have used these devices and they have found a potential break?

Mr. LOEB. They have found wall thinning and they have found corrosion, yes, and they can clearly do that. But, again, if you have external damage perhaps from a front loader or something of that nature and you don't have wall thinning, the smart pig may not pick that up.

PIPELINE VALVE SPACING

Mr. WOLF. The other question was that we were told that the valves were not close enough. Do you have any comments about that and whether they should be automatic? I think there are regulations that prohibit nonpipeline people from shutting the valves off.

Mr. VOGT. Excuse me for interrupting, but just for the record, George Reagle, with whom you are speaking, is the head of our Surface Transportation Division and Dr. Loeb, with whom you are also speaking, is the head of our Research And Engineering Division.

Mr. WOLF. Do you have any comments about the valves and whether they should be manual or—

Mr. REAGLE. The remotely controlled valves were really actuated from Atlanta. Those were closed in a short period of time after they sensed a decrease in pressure, but there is a long distance between those remotely controlled valves. What comes to mind is something like 35 miles if I remember correctly. There were manual valves much closer, and employees of Colonial had to go to

those sites and turn those valves off. Those are the kinds of issues, Mr. Wolf, we want to look at in this investigation.

Mr. WOLF. Could you let us know, too, whether or not you think there ought to be automatic valves closer together? With a manual valve, somebody has to get in a truck or automobile, drive out to it, and I understand why they just don't want anyone to do this, but I have had people say the police ought to be able to shut them off. Maybe you are dealing with a volatile situation where if you shut it off, you blow up something or somebody, and we have had a blow up out there very close to that where individuals were killed. Could you give us some sense of how close you think the automatic valves should be versus the manual valves, and could you also have someone look at how long it actually took Colonial to get out to shut the manuals off.

Mr. REAGLE. That would be one of the issues we would look at in the investigation.

GRADE CROSSING ACCIDENTS

Mr. WOLF. Okay, fine. Thank you very, very much. I guess that is it.

There is one other question. We have the VRE in our district, the Virginia Railway Express. Since most of the crashworthiness studies have focused on locomotives in a pull mode, this raises another grade crossing safety issue. Do you have any data about grade crossing accidents where the train was in a push mode, and, therefore, a cab or passenger car was in the lead?

Mr. REAGLE. Mr. Wolf, it is one of the issues our railroad division is concerned about. We have seen at least one crash in California, if I remember, where it was in the push mode and therefore the crashworthiness wasn't where we would want it to be, and it is an issue we want to continue to monitor. Whether in fact we do a study on it I am not sure at this point, but it does present some problems.

Mr. WOLF. You would be looking to see if they should be manufactured differently?

Mr. REAGLE. We would look at what happens in a crash, and obviously what changes, if any, we would want to make in the crashworthiness requirements of those vehicles.

Mr. WOLF. Are you the first group to look at that?

Mr. REAGLE. I don't know the answer to that.

Mr. WOLF. If you would let us know, because I would like to talk to the Virginia Railway Express and see what they are doing. This is a potential problem out in the Manassas area and the western Fairfax area. Thank you very much.

Mr. VOGT. The push-pull is widely used in high speed rail in Europe, but a lot of that is on designated track, so you don't have grade crossings. There may be some database there, although their standards are generally not up to ours.

Mr. WOLF. Is that right?

Mr. VOGT. In rail, yes, sir.

Mr. WOLF. Not up to ours with regard to——

Mr. VOGT. Safety, crashworthiness.

Mr. WOLF. Is that because they are not at grade or they just don't do it?

Mr. VOGT. I don't know why it is. I know from my Amtrak experience, but in bringing their equipment over here or considering whether to bring it over here to use it on a full-time basis here, it would be subject to fairly extensive modification.

EUROPEAN RAILROAD ACCIDENTS

Mr. WOLF. I am always hearing of train accidents in Europe. Just the other day there was a major accident in Berlin. Has anyone ever looked at the safety records of European trains?

Mr. VOGT. I don't know.

Mr. WOLF. Has anyone ever looked at the overall safety record?

Mr. VOGT. I think not.

Mr. WOLF. It seems like not a month goes by that there is not a major crash somewhere in Europe.

Mr. VOGT. The really premiere trains like the TGV have a good safety record, but again they only run on tracks that they use. They don't have any freight operations and no grade crossings. In Sweden they operate this tilt train that has been brought over here and Amtrak is experimenting with on the northeast corridor, and it is designed, as is the German ICE, to operate on track that is used for both freight and passenger, and they also travel at very high speeds, in excess of 150 miles an hour. They are fairly new and so accident data about the high speed aspect of these operations probably is relatively scarce at this point, but it is an interesting question because they do have different safety standards than we do.

Mr. WOLF. If you ever come across any articles, I am not asking you to do any studies, but if you ever come across any articles about the safety situation with regard to the trains and rail in Europe, I would be interested in it.

Mr. VOGT. We certainly will.

ALCOHOL-RELATED ACCIDENTS

Mr. WOLF. I want to thank you again. I hope you will get back to us quickly on these other things. It seems to me on all these things, on rail-well, maybe not rail, but on cars and boats, we really have potential safety problems, but I think we have alcohol problems, and—

Mr. VOGT. No question.

Mr. WOLF. You have got to come up with programs to kind of deal with that, and in our culture and society the trend seems to be going just the opposite.

Mr. VOGT. We don't find any inconsistencies in the fact that of the 40,000 or so people killed last year on the highways, half of them had alcohol involvement.

Mr. WOLF. Half. Thank you very much.

Thank you, Mr. Chairman.

EUROPEAN AND AMERICAN RAILROAD ACTIVITIES

Mr. CARR. We have a number of questions for the record to supplement Mr. Wolf's questions with regard to the Colonial pipeline

rupture. We have a number of questions on the Palm Springs school bus accident. Turning to trains I would like to underscore Mr. Wolf's request that not at great cost or staff time, you supply this subcommittee with a brief overview, if you will, of the differences in safety standards between Europe and the United States. Also please provide some data so we can begin to form an opinion about the relative safety outcomes in the United States and in Europe. Obviously, Europeans use trains more than we do, but some of the information that has come to this subcommittee is that the European trains are not up to our standards of safety: This subcommittee gets bombarded routinely on behalf of rail advocates, and one of the things we hear all the time is this wonderful European system that they have and that we don't have, and that somehow or other we are in the stone ages on rail. Information such as you have supplied just indicates that that is not true.

We have a different kind of modal mix here, and it is nothing to be ashamed of. So, anything you can give us to help this subcommittee put the facts out would be helpful, instead of the romance of the rails that somehow or other seeps around the halls of Congress a lot.

Mr. VOGT. I might add, I know that when Gil Carmichael was at the FRA, they did a lot of looking into high speed rail and may have some information that would be relevant also because of the European experience with that.

[Additional information follows:]



National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

May 10, 1993

Honorable Robert Carr
Chairman, Subcommittee on Transportation
and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Carr:

This letter is in response to the question raised at our recent budget hearing about how U.S. railroad standards and safety records compare to those of Europe. This is a very complex question to answer. There are significant differences between railroad operations in the United States and those in Europe. In Europe some high speed passenger trains are operated over track dedicated to these operations unlike our mixed movements of passenger and freight trains in this country. Further, although European freight and passenger railroad equipment used in interchange service between European countries meets certain minimum European standards (for interchange purposes), the individual state railroads apply their own standards to the building and maintaining of rolling stock and track.

The standards are quite different depending on which country you examine. An example is the crashworthiness standards that exist in Sweden for their high speed trains. The requirement in Sweden is that the train must be able to strike a 1000 kg cylinder suspended at coupler height at full train design speed without the cylinder penetrating into the passenger compartment. This standard is not consistent from country to country in Europe.

The Safety Board has contacted the Federal Railroad Administration (FRA), the Association of American Railroads (AAR), and the European International Railway Union (UIC) to gather data to answer your questions. We expect that it will take some time to gather and analyze the information. However, we will provide you with additional information as soon as it becomes available.

Sincerely,

A handwritten signature in dark ink, appearing to read "Carl W. Vogt".

Carl W. Vogt
Chairman

GRADE CROSSING ACCIDENTS

Mr. CARR. We will certainly ask them. Also, we have a specific question about the Amtrak Train 91 accident in Florida. I might say that you mentioned the number of fatalities for boating accidents, but the number of fatalities at railroad crossings is about as high.

Mr. VOGT. It is high.

Mr. CARR. Have you spent any time on that particular problem?

Mr. VOGT. Since 1968 the Board has made 135 recommendations that pertain to railroad crossings, grade crossings. In the Florida accident where an Amtrak train hit an Amerada Hess tank truck, a number of Board issue areas were present. You had hazardous materials and we have made a number of recommendations that pertain to the transportation of hazardous materials and grade crossings. You also had a highway construction site. Apparently, the truck was on the track as the train was coming. The gates came down, and hit the truck, and he drove right through one of them. Yet we still had an accident. All these issues highlight the multiple problems having to do with grade crossings. It is a confounding problem, as you well know. The jurisdictional issues between the States and the railroads over who maintains the roadways across the tracks also are problems.

We will discuss more recommendations and possibly reiterate prior recommendations when the Board considers the final report. One of the factors, Mr. Chairman, that does come up over and over again may not be particularly an issue in this case. That issue centers on the underestimation by some people of the lethality of trying to beat a train across a track. It is such a human judgment factor, and one which confounds the mechanical aspect of how you block off crossings and install lights and whistles and horns.

The train had a horn, bells went off at the crossing, there were flashing lights. Everything was working and we still had an accident. So training and awareness are big factors, but they are very difficult to control.

GRADE CROSSING SIGNALS

Mr. CARR. It is anecdotal, of course, but I think all of us have come upon a train signal that at least appeared to be inoperative. It isn't hard out in Michigan to find yourself at a grade crossing with the gates down. Sometimes, there is no gate and the signals are going off, and you seemingly look to the horizon on both ends of the tracks and there is nothing there. So you say let's go. I suppose all of us in some manner have met that situation, and we have violated the signal.

Is reliability of the signal part of your study or your recommendations?

Mr. VOGT. Well, I am going to have to refer to our experts here on this, but I think we have all had that frustration.

Mr. REAGLE. Well, with respect to this specific accident, it is certainly something we would look at. From preliminary information the gates came down, and everything appeared to work as it should have with this specific accident.

With respect to grade crossing accidents and studies we have done in the past I would have to refer to Dr. Loeb.

Mr. LOEB. In the mid 1980s we did a number of studies on grade crossings, including one in 1985 that included all of the fatal Amtrak accidents at grade crossings. One of the things we learned in the process was that one of the most important things from the driver's perspective is a constant time warning system, and I think that is probably one of the things that you are getting at.

The other thing is the reliability of the systems, and we made a number of recommendations at that time, and there is a likelihood we will probably undertake another study some time in the near future.

Mr. CARR. Well, I understand. I am not an expert in train operations, obviously, but I understand there are ways and circumstances where a train stops. On a particularly sensitive part of the track where there is a signal device a stopped train can trigger a signal to lead the motorist into believing a train is coming when a train is not, it is just sitting there. Some of these circumstances occur when the train can be observed and the traffic moves around the signal fairly safely, but then that situation might be a false positive if yet another train is coming and you have got a double track or something like that.

I think the whole area of signalization, and giving motorists reliable information that they can act upon and know that if they violate it that they are in harm's way, would provide get a better result. Six hundred and eight fatalities occurred last year at grade crossings.

Mr. LOEB. Six hundred.

Mr. CARR. That is an improvement over the past, but relative to the amount of time and energy we spend on the relative volume of fatalities, grade crossing accident would appear to be somewhat important.

STAFFING LEVELS

We have a number of questions regarding your staffing levels. You had asked OMB for 27 more FTEs than your 1993 staffing level, and your OMB submission suggests that it was necessary to enhance the depth of staffing such that when accidents occur simultaneously, or back to back you can still launch your multidisciplinary teams without undue stress on the staffing system. From that standpoint, I guess you say you are understaffed because of those peak loading problems.

Can you tell us what specific problems you encounter in operating when you get a back-to-back or simultaneous accidents?

Mr. VOGT. Well, as succinctly as possible, our problem has to do with the numbers of highly-technical people we have available at any given time. And since we do have a Go Team situation, where we have people on 24-hour call, if just hypothetically you have an investigator who is in the middle of writing a report and suddenly he or she gets called out on another major accident, everything grinds to a halt while that new involvement takes place, and then you get delays.

We are less than three deep in any number of critical specialties. We have one avionics engineer on board, for example.

If we are involved in an aviation accident that involves serious avionics problems, we have no choice but to send that person out on the accident regardless of what he or she is doing. We believe very strongly that the timeliness and the quality of our reports is extremely important. In the early 1980s, our average time to release a report was something around eight, eight and a half months.

The average time to release a report is now over a year. We are working to bring that down. And our current authorization level of 381 FTEs plus three, because of the civil penalties jurisdiction that we have is the target that we are shooting for in FY 1995 and FY 1996. And with the help of this committee and the Congress, we have been building our force strength back up from its low point of almost 300 employees in 1983.

We know we can do things more quickly and more efficiently. And we also will have the ability to investigate incidents and foreign accidents to a greater extent with additional people. But we also understand what the administration is trying to do and we are going to make our very best effort to maintain our effectiveness.

The FTE cut impact is not going to be on our response to catastrophic, domestic accidents. We will respond to those under any circumstance. Our problems are going to arise in the timeliness and the quality of our work and in our ability to get involved in incidents, and in particular in foreign accidents. In my judgment, foreign accidents are the largest single area of growth, if you will, in our activities, and will be for some time to come.

TIMELINESS OF REPORTS

Mr. CARR. Well, why is it important to have a report out in eight months as opposed to 13 months?

Mr. VOGT. Well, if you wait too long, you lose the impact of the recommendations. It takes a while for recommendations to be accepted, and the longer it takes to complete a report, the longer it will take to issue remedial safety recommendations. For example, in the Florida grade crossing accident we were just talking about, the recommendations issued are going to have much more impact on the recipients than if we get them out when the whole circumstances are fresh in people's minds.

Also, the longer you take to develop a report, the longer the memories, the more stale the data becomes, and when you have investigators who are doing two or three accidents at a time, you simply can't get the concentrated effort you want. If you have to go back and start all over again on something you have just spent three months working on, your product is just not going to be as good.

I am rambling on, but just in almost every mode this is important to us. Timeliness is important. Also, it goes to other things like work load and employee retention. We get some very overworked people when we have multiple involvement in major accidents. And we have had a problem in the past with retention, but our attrition rate has been improved.

Part of that is due to the 1990 reorganization and part of it is due to the increase in staffing levels that we have gained over the last few years, so that we can give people time for training, time for relief, and time to do what they do best, and that is to stay involved in an accident until the investigation and report are complete.

FY 1994 BUDGET REQUEST

Mr. CARR. The President's budget request for fiscal year 1994 is an increase of \$1.125 million over fiscal year 1993. What are the major increases and any decreases that you have in your budget request?

Mr. VOGT. Almost all of that has to do with pay increases and inflation-related increases. Our entitlements—health care benefits, for example, have gone up substantially. We have more employees in the FERS program and the Thrift Savings Plan. All of these things just push up our uncontrollable costs. The \$1.125 million is basically in pay increases and uncontrollable cost increases while maintaining a smaller FTE base.

EMERGENCY FUND

Mr. CARR. You have requested \$360,802 to replenish the Board's emergency fund to its authorized level of \$1 million.

Mr. VOGT. Yes; We requested the replenishment from OMB, but it is not part of our Congressional request.

Mr. CARR. Can you explain what the purpose of the fund is and what types of expenditures you make out of the fund? Why is it important to be at \$1 million as opposed to \$700,000?

Mr. VOGT. Well, the fund was set up originally at the \$1 million level and to be used until it was exhausted for emergencies, nonrecurring items. It has been used twice since it was established. We funded, I believe, about 16 percent of the cost of retrieving a United 747 cargo do that fell into the ocean at a 13,000-foot depth.

The Navy finally brought it up. It resulted in a change in our recommendation.

We also had a 747 crash off the coast of Lockerbie, Scotland involving an Air India aircraft that we spent, I think, \$291,000 out of the fund. So we are now down into the \$600,000 range in the fund.

If you look at the Lockerbie crash, if that aircraft had traveled another hundred miles, it would have been in the ocean in international waters. It was our airline, it was our aircraft and our engines and the investigation would have been under NTSB jurisdiction.

The British spent \$20 million on that investigation. It doesn't take much of an accident to expend large amounts of money, if it happens in our jurisdiction.

If we have anything that approximates that the lesser amounts we have in the Emergency Fund, the more reluctant we are to spend because we don't want to allocate our balance on a single accident and have the fund empty. So our comfort level and our ability to react is much greater at the higher level.

The money can go in a hurry when the situation arises. We have had relatively few major accidents, at least until three weeks ago.

But if you look back at the figures there are no trend lines in major accidents in aviation.

It is just as likely a 747 will have a problem tomorrow as it was 15 years ago. In fact, we have seen several disturbing accidents involving those aircraft recently.

Mr. CARR. What would be the impact of not providing additional funding? What is wrong with you—with OMB's approval—exercising your discretion to utilize available funding, and perhaps, emergency reprogrammings and supplementals to make up the shortfall at the end of the year? What is wrong with that procedure?

Mr. VOGT. Well, we would certainly have to do that if we got into the circumstance. But if we have a major need to expend some or all of this money, then we are simply coming up here hat-in-hand. We obviously feel in a more comfortable position, and a more flexible and versatile position, if the fund could be maintained at the \$1 million level.

In the scheme of things, it is not a lot of money, but it is a very, very important tool to have available. If we have another \$300,000 expenditure, then we are down where we are reluctant to touch it unless we have to.

Mr. KELLER. In the beginning of the year, it is more appropriate for us to be able to have changes in our flexibility as far as resources. We can reprogram, try and cover costs, but as the year goes on, the fiscal year proceeds and we get into the later stages, into the third and possibly into the fourth quarter, that \$1 million becomes very important to us.

Mr. CARR. What is the largest single drawdown you have ever made on the fund?

Mr. KELLER. Two hundred ninety one thousand dollars.

Mr. VOGT. That was off the coast of Scotland, right?

Mr. KELLER. Yes. And that was only a 50-percent share of the cost of that recovery. We have, in the past, tried to get the airlines or the FAA to contribute to the recovery process. It has been successful so far.

AIRMAN APPEALS

Mr. CARR. You currently have the responsibility to review appeals of FAA decisions to suspend or revoke pilots' certificates and licenses. In addition, legislation passed last year transferred to NTSB the adjudication of civil penalties assessed by the FAA against pilots and flight attendants. In reference to FAA pilot certificate actions, the OMB justifications refer to a significant backlog of appeal cases that currently await disposition either by administrative law judges or the full Board. What is the current number of backlogged certificate cases and what is your projection under the fiscal year 1994 request?

Mr. VOGT. The current backlog right now is 217 cases. We have been working that backlog down. It was substantially higher at one point.

We haven't yet felt the impact of the new civil penalty jurisdiction because only cases that arise after August of 1992 will come to us, and there is a several month lag in the prosecution of these cases.

The FAA has also taken on, at least for now, a view that they are doing remedial orders rather than penalties. The whole thing is in the state of evolution, so we don't yet immediately know what the impact is going to be. But we asked OMB for an additional ALJ, a lawyer and a clerk to support this new responsibility and we think that within the next six to nine months that the case load is going to begin to materialize for us.

FAA AIRCRAFT

Mr. CARR. Would you give me an update on your use of the FAA's aircraft?

Mr. VOGT. Yes. We have used the plane nine times in the last year, and four of them have occurred in the last 30 days. Last week, when a DC-10 American Airlines went off the runway in Dallas, we used the G-4 to take our Go Team and FAA personnel to Dallas.

With one of the runways in Dallas closed, people were straggling in from Washington at various times. We were able to get down there, examine the site, get our Go Team organized that evening, and have people investigating first thing the next morning.

I think it is a conservative estimate, we will get the final details on it, but for the use of that aircraft, that runway probably would have been shut down another 12 and maybe another 24 hours. We were able to release the aircraft at least a full 12 hours sooner than we would have been able to had we not been able to get down there at the time.

I had a call from the Secretary who wanted to make sure I understood that the aircraft was available and that he understood our need to use it.

We also have used it a couple of times in Alaska. A China Eastern MD-11 had an uncontrollable flight due, we believe, to the extension of leading-edge slats and landed at Shema Air Force Base. There is no commercial service to Shema Air Force Base.

As you know, it is a highly-secret operation and we estimate we saved at least 12, probably 24 hours, in getting our team to that site by use of the G-4.

We also had a case involving an Evergreen Airlines 747 that dropped an engine in a suburb of Anchorage, and our team went up there using the FAA Lear and was able to arrive considerably before we could have gotten there commercially.

We also had a situation in Guatemala City where Boeing 767 aircraft went off the runway, and our team used the FAA airplane. So we have had very good cooperation from the FAA, and a lot of these things have occurred recently and the planes have been extremely important to us.

Getting to the scene early, in force and in control of the site is not only important to our investigation, but as in Dallas, it is very important to the airport.

We are in negotiations with the FAA now. As you may be aware, they are concerned that in our use of the plane for nonaviation matters in which they are not involved, there should be a payment from the NTSB for that usage. These discussions are ongoing and we think they will be resolved.

It is our position that the plane is available for surface as well as aviation accidents, and that was our agreement negotiated at the time that Donald Engen was Administrator of the FAA. So I think we are headed in the right direction. I hope the negotiations will be concluded shortly.

FAA AIRCRAFT

Mr. CARR. Well, I thank you for that testimony.

Do I understand that you have talked to the Secretary and educated the Secretary about the use of this aircraft for your activities?

Mr. VOGT. Well, I hasten to add, the Secretary called me.

Mr. CARR. Good.

Mr. VOGT. To discuss his interest in supporting our activities with their aircraft.

Mr. CARR. I think the Secretary may have been misinformed as to what the mission of that aircraft was: Hopefully, his mistaken impression has been corrected.

Relative to the FAA charging you for nonaviation uses, I can just state for the record as one who was involved in the purchase of that airplane and why we purchased it, the purchase was without qualification, that the plane be available for the use by the NTSB for whatever accident it was investigating within its jurisdiction. And I think that is fairly clear. If any of our friends at the FAA don't get that message loud and clear, then we will give it to them when they come up for their hearing. We will contemplate transferring the ownership of that airplane to the NTSB, then, they can rent it from you.

Mr. VOGT. We appreciate your support on that and that has certainly always been our understanding.

Mr. CARR. They certainly have critical needs for the aircraft as well: I don't mean to diminish the FAA's needs, but the FAA should not be involved in a silly little tug of war with you over nickels and dimes.

Mr. VOGT. We appreciate that.

Mr. CARR. Otherwise, some other agency can operate that airplane and then the FAA can pay the rent to some other agency. That is not entirely out of the question.

Mr. VOGT. Well, we would know how to do that.

Mr. CARR. Well, I think it makes sense that the FAA operate the plane, but I just want to make the point. We have a number of other questions that we will ask for the record.

RECREATIONAL BOATING ACCIDENTS

Mr. CARR. Last week you released a major safety study on recreational boating which recommended that states adopt more comprehensive laws governing alcohol-impaired boaters, require children to wear life jackets, and consider mandatory training and licensing for boat operators. One finding in your study is that in 1991, after highway accidents, recreational boating accidents resulted in more fatalities than any other transportation mode. It appears that this may be an area that has slipped between the cracks in terms of Federal oversight. Is the Coast Guard doing all that it

should in terms of Federal oversight, and in encouraging the States to take appropriate actions?

[The information follows:]

The Coast Guard has promoted the need for increased voluntary wearing of personal flotation devices by recreational boaters, has supported the States' activities in reducing the incidence of boating while intoxicated, and has frequently debated the need for mandatory boating safety education and the components of a comprehensive education course. However, the Coast Guard probably has not taken as active a role as it should have in ensuring the proficiency of recreational boat operators. The Safety Board also believes that the Coast Guard should take a more active role in determining if the funds allocated through the Aquatic Resources Trust Fund and used to improve boating safety are achieving their intended goal. For example, the Safety Board believes that the Coast Guard should undertake a study to evaluate the effectiveness of individual State programs aimed at curbing the alcohol use in recreational boating, and should use its funding authority to encourage States to implement those programs that are most effective.

RECREATIONAL BOATING SAFETY

Mr. CARR. What actions do you believe are needed to create effective sanctions for those who operate recreational vessels in a hazardous manner?

[The information follows:]

The Safety Board believes that establishment by the States of a requirement that boat operators demonstrate knowledge of safe boating rules and an ability to operate the vessel and possess a certificate of completion or an operator's license would enhance the ability of the States to impose and enforce sanctions against operators of recreational boats. To assist the States in establishing these requirements, the U.S. Coast Guard and the National Association of State Boating Law Administrators (NASBLA) should develop guidelines that would be used by the States to implement minimum recreational boating safety standards. These guidelines would address, for example, the skills and knowledge necessary to demonstrate competency in operating different types of recreational boats. The Coast Guard and NASBLA should also determine for which vessels and under what conditions it should be necessary to demonstrate an ability to operate the vessel. The Coast Guard and NASBLA should address the methods by which demonstration of proficiency can be accomplished, such as through formal boating safety courses or self-teaching methods, how a license, if the State opts to implement a licensing program, would be issued and the period for which the license would be valid.

STATES' BOATING SAFETY PROGRAMS

Mr. CARR. Are there any States that you would hold up as a model for other States for having a comprehensive program to address boating safety?

[The information follows:]

There is no one State that the Board would cite as having a model program; however, certain States have strong programs in either the boating while intoxicated or education areas. For example, the States of California, Indiana, Maryland, and Michigan have adopted aggressive state enforcement programs aimed at deterring the use of alcohol in recreational boating. The States of Connecticut, Maryland, and Vermont have adopted mandatory education and certification requirements for all boat operators born after a certain year. The U.S. Army Corp of Engineers, Pittsburgh District has, what appears to be, a successful program requiring use of personal flotation devices on all Corp waters in that district.

LICENSING OF RECREATIONAL BOATERS

Mr. CARR. You seem to sidestep the question of whether recreational boaters ought to be licensed. What are the benefits and the problems that you see with States requiring such licenses?

[The information follows:]

An operator's license would provide a more effective means of enforcing boating laws, than would an operator's certificate. Although marine officers can currently suspend operating privileges, without a license, there is no mechanism to monitor boaters who have violated boating laws. The available data from the National Highway Traffic Safety Administration indicates that the suspension or revocation of a person's driving license, if found to be driving under the influence of alcohol or other drugs, has proven to be a successful deterrent to this behavior. It is reasonable to believe that the suspension or revocation of a boating license would be an effective deterrent to boating while under the influence. Suspending or revoking a boating license could also prove effective in enforcing existing and future laws requiring the wearing of personal flotation devices.

The main problem related to States requiring licenses is that it will add some level of administrative burden. However, the Safety Board believes that existing administrative organizations, such as titling and registration authorities, motor vehicle, or other State taxing units, could administer the records and fees related to licensing. Further, organizations such as the National Association of State Boating Law Administrators could serve the role of either administering the program and/or informing and educating the public of the need to obtain a license. The Board believes, however, that the States should make the determination whether a license or certification program is more appropriate for the type of recreational boating that is done in their area.

COLONIAL PIPELINE ACCIDENT

Mr. CARR. The recent Colonial pipeline oil spill in Reston, Virginia, has brought to the forefront once again the issue of pipeline safety. We have more than 1.5 million miles of natural gas and petroleum pipeline in this country, with responsibility for their safe operations shared between DOT and the States. Would you give us a brief overview on pipeline safety based on your accident investigations? What is the big picture regarding the status of pipeline safety?

[The information follows:]

Overall, transportation by pipeline is one of the safest ways of transporting hazardous materials in the United States. However, pipelines are aging and areas are now being developed adjacent to previously remote pipelines. Both of these problems increase the potential for pipeline rupture. The effects of aging on pipelines is unknown. Some of the potential effects the Safety Board is concerned with are corrosion and fatigue. Development brings with it large construction equipment that can easily damage the pipelines. The communities and the pipeline and construction industry will have to be more vigilant in the future as development encroaches on these pipelines. This will require permitting use of the "one-call-system," and more use of internal inspection devices.

The aging of the pipelines will require increased inspection and maintenance. In addition, more enhanced training and its validation will be needed to assure that systems are properly inspected, data is interpreted, and corrective actions are taken.

To reduce the magnitude of spills, closer spaced remotely operated valves and more effective leak detection systems will be required, especially in populated and environmentally sensitive areas.

Finally the Safety Board is concerned with the use of caverns for storage and their associated safety control systems.

PIPELINE INSPECTIONS

Mr. CARR. Do you believe the RSPA has the resources it needs to conduct adequate inspections and to ensure compliance with its regulations?

[The information follows:]

The RSPA does not have sufficient staff to conduct inspections as frequently as necessary and to ensure compliance with its regulations. RSPA will need to continue to work more effectively with all State agencies to enhance the pipeline safety program and bring about increased compliance with regulations.

PIPELINE VALVES RULEMAKING

Mr. CARR. NTSB has supported greater use by the pipeline industry of remote and automatic valves to promptly isolate failed portions of pipelines. Legislation passed last year mandated RSPA to conduct rulemaking to require the installation of remotely operated valves on pipelines at either side of water crossings and at locations near populated areas. Do you know what the status is of this rulemaking?

[The information follows:]

The Safety Board has been urging RSPA to require the installation of remote operated valves on pipelines that transport hazardous liquids since 1971, and since 1987, we have specifically encouraged closer spaced remote operated valves in areas where there is a higher population at risk. RSPA has completed research in this area that showed it was cost-beneficial to install these devices in areas of higher population and environmental sensitivity. However, RSPA has not yet issued an advanced notice of proposed rulemaking to require the installation of remotely operated valves on the pipelines.

Mr. CARR. Had this regulation been in place, would it have made a difference in the Colonial accident?

[The information follows:]

Had remotely operated valves been spaced more closely on either side of the pipeline break, Colonial could have shut the pipeline down in a more timely manner and reduced the size of the spill. The spacing, location of the valves relative to ground slope, and pressure would have an effect on the amount of material that is released.

OIL SPILL RESPONSE PLANS

Mr. CARR. Under the Oil Pollution Act of 1990, oil pipeline operators must now file with RSPA oil spill response plans. What is your opinion on the emergency response conducted by Colonial? Were their procedures adequate?

[The information follows:]

The Safety Board has devoted most of its available resources on investigating the cause of the accident. We plan to collect and analyze reports on the spill mitigation from the EPA and other organizations. At this time, without the reports from the other agencies involved in the mitigation, it would be premature for the Safety Board to make an assessment on response.

COLONIAL PIPELINE ACCIDENT

Mr. CARR. Are there any other safety issues that you are looking at within this accident investigation that we have not touched on?

[The information follows:]

Issue areas the Safety Board plans to look into with respect to the Colonial Pipeline accident include:

- The overall safety experience of Colonial's system;

- Spacing, location and the use of remote controlled valves to reduce the amount of product released during a rupture, especially in sensitive and high-density population areas;

- Leak detection with existing supervisory control and data acquisition system (SCADA);

- Sophisticated internal inspection devices and their ability to find deficiencies as well as provisions for entering the devices into the pipeline;

- The need for periodic hydrostatic tests of existing pipelines to determine soundness of the pipeline;

- Requirements for backfill around a pipeline; and

- The adequacy of the environmental response to mitigate the spill.

PALM SPRINGS SCHOOL BUS ACCIDENT

Mr. CARR. When you were here in March, you were still in the process of completing your investigation of the 1991 Palm Springs accident in which a chartered school bus carrying 45 Girl Scouts went out of control, killing six people. Last week, you released your final report on the accident. What more should the Federal Government be doing on school bus safety as a result of your work on this accident?

[The information follows:]

As a result of its investigation of the Palm Springs accident, the Safety Board found that the minor injuries sustained by 65 percent of the schoolbus passengers seated away from the major impact areas attests to the effectiveness of the crash protection afforded by compartmentalization features in the accident bus interior. The Safety Board found that Federal Regulations concerning occupant protection, fuel tank integrity, and schoolbus crashworthiness, prevented this accident from being more severe.

Although the Safety Board made no recommendations to Federal agencies concerning schoolbus safety as a result of the Palm Springs accident, the Board did recommend to the National Association of State Directors of Pupil Transportation Services to: (a) encourage its members to incorporate automatic transmission upshift characteristics and proper transmission operation in mountainous terrain, where appropriate, into each school jurisdiction bus driver training curriculum, and (b) require that all school and tour bus air mechanical brakes with manual slack adjusters be fully adjusted at each required inspection.

Mr. CARR. Your investigation of this accident took approximately 21 months. Why did it take so long to complete?

[The information follows:]

There were several things which affected the time necessary for the investigation of this accident, some generic and some specific to the accident:

First, at the beginning of calendar year 1992 we started a new report writing process in the Office of Surface Transportation Safety. We believe the quality of reports have been improved because of adoption of this new process, and succeeding reports are being produced in a more timely manner.

Another factor that had an effect on productions of this report was the shortage of people in the human performance and survival factors disciplines. At the time of the accident we had 3 people in Human Performance to cover all highway, railroad, marine, and pipeline accidents, and now we have a total of six human performance investigators on board, which we believe is a better ratio.

Specific to this report, we had a public hearing, and although the need for additional testing and research to confirm some in-gear speed analysis, became apparent early in the spring of 1992 because of other assignments by staff assigned to the report, we couldn't complete these tests until August of 1992. A key factor in selecting August 1992 to complete these tests was that during this time the Tramway is closed down for annual maintenance, so tests could be conducted on the Tramway Road without endangering the public.

Now that the new report process has been implemented we believe that future reports will be more timely—as an example, we anticipate that the staff's investigation and proposes recommendations made as a result of the Vernon, New Jersey, accident investigation, will be before the Board for consideration within 10 months of the accident.

FORT LAUDERDALE GRADE CROSSING ACCIDENT

Mr. CARR. Please give us a status report on your investigation of the March 17th grade crossing collision of the Amtrak Train 91 with an oil tanker in Fort Lauderdale. That accident killed six people, injured 15 others and destroyed eight vehicles. Press accounts have suggested that your preliminary findings are that construction work in the area may have contributed to the accident.

[The information follows:]

About 3:13 p.m., est, on Wednesday, March 17, 1993, southbound Amtrak Train 91 collided with a westbound Amerada Hess gasoline tractor semi-trailer truck at a highway grade crossing located within a highway work zone resulting in a fire from the truck's cargo. The road, Cypress Creek Road, was being widened to six lanes by a contractor working for Broward County. Work had begun about July 1992. At the time of the accident traffic was being maintained with barricades and signage to direct traffic through the construction area.

Amtrak Train 91, designated the "Silver Star," consisted of one locomotive and eleven passenger cars sustained minor fire and smoke damage. The diner, which came to rest on the grade crossing, was severely damaged by the fire.

There were 121 passengers and 14 train crewmembers on Train 91. Twelve persons sustained minor injuries and were transported to area hospitals. All passengers and train crew evacuated the train. One injury was reported during the evacuation process.

The Amerada Hess truck was en route from its terminal in Port Everglades delivering 8,500 gallons of gasoline to a station in nearby Margate, Florida. The truck was destroyed in the collision and fire.

The grade crossing was equipped with flashing lights mounted on a mast, one set of flashing lights on a cantilever over each line (two sets for each direction), bells, and 38 foot gates.

Nine vehicles on the west side of the grade crossing were destroyed by the fire. Five occupants, in the waiting vehicles, died as a result of the fire. The Amerada Hess truck driver also died in the fire.

Witnesses, including the engineer of Train 91, observed the Amerada Hess truck on the crossing and the grade crossing warning devices activated with the gates coming down striking the truck. The truck continued across the tracks breaking the gate and was struck near the rear axle of the trailer.

STAFFING LEVEL

Mr. CARR. What specific problems, if any, do you envision with operating at the level of 348 FTE proposed in the President's budget?

[The information follows:]

Operating at the 348 FTE level proposed by the President's budget will have a serious impact on the Safety Board's ability to perform its transportation safety mission in both the short term as well as the long run.

In the short term, the obvious problem will be to reduce our FTE to 348 next year. This means having to lose a total of 19 positions from our current on board strength within a relatively short timeframe. Because our experience has shown that a reduction-in-force has very disastrous effects in both the short term as well as in the long run, we are committed to achieving this reduced level through attrition. Obviously, we need to reach the 348 on board level as soon as possible if we are to reach our FTE ceiling for FY 1994.

The down side of relying on attrition to achieve our 348 target, of course, is that we have no idea which positions will become vacant over the next several months. It likely will take us a period of years to achieve the optimum mix of positions at that reduced level.

In time, even though we will continue to respond promptly to investigate major accidents, our lack of staffing depth in critical positions will delay issuance of reports, and will seriously limit our ability to followup on safety recommendations and to keep abreast of changing technologies. Our technical/investigative staff will be forced to spend most of its time gathering the factual information related to an accident and developing safety recommendations to address issues that arose during the fact-finding phase of the investigation, while allowing the analysis of the findings to be prolonged. Effectively, it will negate much of the progress we've made in recent years with the support of both OMB and the Congress to enhance our staffing depth at critical positions.

Mr. CARR. How does the Board determine the staff needed for your agency given the number of accidents in any given year is unpredictable?

[The information follows:]

The staff requirements for the Safety Board remain fairly constant from year to year. It is not so much the number, but the location of the accidents that is unpre-

dictable. For example, although catastrophic aviation accidents may be down in the U.S., our participation in foreign accidents involving U.S.-manufactured products is increasing.

Mr. CARR. The staffing level of 348 FTEs in the President's budget is nine fewer FTEs than provided in fiscal year 1993. How many of these position reductions will affect your technical and investigative staff?

[The information follows:]

We do not know precisely where the position reductions will take place, since we expect attrition to get us to our target level for FY 1994. However, should the attrition take place as we expect, seven of the position reductions will affect our technical and investigative staff.

STAFF REDUCTIONS

Mr. CARR. Your OMB submission includes a request of 20 additional positions to improve your staffing depth in technical and investigative specialties. But, on page 92 of your justifications it appears that you will eliminate specialists in human performance, for rail; bridge engineering, for highway; and survival factors, for marine. With these reductions, it appears that you will not only have no staffing depth in these areas, but that you will not have any expertise at all. How will these reductions affect your ability to conduct thorough and comprehensive investigations?

[The information follows:]

These reductions may affect the thoroughness and comprehensiveness of our investigations. In areas where we lack experts, we will have to use other staff that have limited expertise in these areas. Thus, many staff members will have to have dual roles in investigations. The reductions may also affect the quality of reports because of the lack of experts and the necessity of investigators to have dual roles in investigations.

ADMINISTRATIVE COSTS

Mr. CARR. You are requesting about a 3 percent increase overall for travel, space rent, printing and other nonpersonnel expenses in fiscal year 1994. Is that consistent with President Clinton's call for a 3 percent reduction in administrative costs?

[The information follows:]

The Safety Board's request does reflect the President's 3 percent (\$91,000) reduction in administrative costs. This cut has been applied across all areas, and therefore, does not offset uncontrollable inflationary increases.

ORGANIZATIONAL CHANGES

Mr. CARR. Have you made any organizational changes in the past year?

[The information follows:]

During the past year the Board has not made any major organizational changes.

PROGRAM EFFICIENCY

Mr. CARR. Are you considering any management actions to improve the efficiency or effectiveness of your programs?

[The information follows:]

Several management actions were taken to improve the efficiency and effectiveness of our programs. During the past year, we developed and began implementation of a Board-wide workload and budget reporting system to be made available for use by all Board organizations. The implementation of a Board-wide computer plan has provided significantly more efficient and effective computer services to all

Board organizations. In addition, revisions that are underway to the Board's Aviation Accident Data Base will provide a substantially complete and responsive census of aviation accidents than previously had been available.

1994 OMB REQUEST

Mr. CARR. Your fiscal year 1994 OMB submission requests \$42.2 million for fiscal year 1994. What would you have done with these resources that you will not be able to do under the President's budget?

[The information follows:]

The most significant difference in our ability to perform our critical transportation safety functions will result from the reduced level of staffing (384 versus 348 FTE). Not only were the 27 requested positions denied, but our current level was reduced by 9 FTEs. The additional positions would have been used primarily to enhance our staffing depth in technical/investigative specialties in both the aviation and surface modes. Not having a full complement of staff in these disciplines will: reduce our flexibility in covering both major and non-major aviation and surface transportation accidents and incidents in the U.S., as well as foreign aviation accidents, possibly causing us to narrow the scope of some investigations; cause possible delays in issuing safety recommendations; limit our ability to followup on those recommendations that have been issued to ensure that corrective actions are being taken; and reduce the timeliness of the Board's accident reports.

The denial of funds (\$500,000) for the permanent change of station (PCS) guaranteed home buy program prevents the NTSB from being able to compete with other agencies such as the Department of Transportation in filling highly technical investigative positions.

The lack of additional funding (\$680,000) for laboratory and ADP equipment will mean we will only be able to do limited upgrades of existing equipment and ADP software.

The additional training dollars (\$250,000) would have provided funding for orientation and technical training for any new employees, and also would have allowed us to expand our in-house technical training for all modes of transportation, and develop administrative/clerical/supervisory/managerial training programs for our current employees.

EMERGENCY FUND

Mr. CARR. What is the current amount of unobligated funds in the Emergency Fund?

[The information follows:]

The current amount of unobligated funds in the Emergency Fund is \$639,000.

CIVIL PENALTY APPEALS STAFF

Mr. CARR. Last year you told us that you anticipated that three FTEs—an administrative law judge, an attorney, and a support person—would be needed to staff the civil penalty appeals on a full-time basis. What staffing arrangement is assumed in your fiscal year 1994 budget request since you are not requesting these additional staff?

[The information follows:]

Without the additional 3 FTEs, the civil penalty appeals workload will have to be absorbed by our current staff. This likely will create a backlog of civil penalty appeal cases, and cause our current backlog of certificate and license appeal cases to increase.

CIVIL PENALTY APPEALS

Mr. CARR. What case load for civil penalty appeals do you anticipate this year and in fiscal year 1994?

[The information follows:]

As of April 15, 1993, the Board had not received any civil penalty cases in FY 1993. Appeals from civil penalty actions by the Federal Aviation Administration (FAA) could not be filed with the Safety Board on alleged charges occurring before August 26, 1992. The FAA has six months from learning of the violation to issue a Notice of Proposed Certificate Action to the airman. Therefore, civil penalty cases from orders issued by the FAA involving charges prior and up to August 26, 1992, would be handled by the FAA Civil Penalty Program. We anticipate that cases that could be appealed to the Safety Board will reach the Board beginning May or June 1993. We anticipate we will receive approximately 20 civil penalty appeals during the last quarter of FY 1993.

In FY 1994, it is conceivable that the Board could receive as many as 60 civil penalty appeals.

CERTIFICATE APPEALS

Mr. CARR. With no additional staff, will your current backlog of certificate appeals get worse? Do you have a plan for addressing this issue?

[The information follows:]

The incoming cases have decreased to such a degree that we believe the current administrative law judge staff can handle the incoming cases without an increase in backlog. In fact, the production of the current staff is such that we anticipate that the backlog will continue to decrease, and will do so at a rate that will enable the current staff to close the cases within the year they are filed. We anticipate the backlog at the end of FY 1993 to be approximately 170.

FAA AIRCRAFT

Mr. CARR. Can you give me an estimate of what impact NTSB reimbursement to FAA for the use of the FAA plane for surface transportation accidents would have on your budget, based on your use of the plane last year?

[The information follows:]

Due to the positive nature of our current discussions with the FAA, we do not expect any impact on our budget of our use of the FAA airplanes.

OCCUPANT RESTRAINT STUDY

Mr. CARR. At our last hearing, I asked about a safety study that you have underway to look at the adequacy of automatic occupant restraint systems. I understand that there is some concern within NHTSA that your study is based on a universe of accidents that is too small upon which to draw valid conclusions, and that your study could present a misleading picture about the safety and effectiveness of automatic seat belts. How are you addressing those concerns?

[The information follows:]

The Safety Board special investigation on automatic restraints is an analysis of 56 clinical case studies rather than a statistical evaluation of the total effectiveness of automatic restraints. The Safety Board believes that studies by NHTSA are correct in that there have been lives saved as a result of automatic restraints. However, the Safety Board believes that certain automatic restraints do not perform as well in certain crash modes as the public rightfully expects. We are strengthening the language in the Board report to stress the difference between the clinical investigations and statistical studies, and the appropriate conclusions to be drawn from each analysis. This should minimize the possibility of erroneous conclusions by readers.

USE OF NHTSA DATA BASES

Mr. CARR. Did you consult with NHTSA about using some of their data bases, such as the National Accident Sampling System

or the Fatal Accident Reporting System, rather than relying on your more limited sample of accidents?

[The information follows:]

The Safety Board utilized both the NHTSA National Accident Sampling System (NASS) and Fatal Accident Reporting System (FARS) data as support material in the production of the Safety Board draft report. We held a technical review meeting to solicit comments from NHTSA as well as from various industry and customer sources on the factual material in the draft report. The cases utilized for the Safety Board report were selected because they had specific issues relevant to automatic restraint systems. The NASS and FARS data have limitations in making clinical assessments. The FARS data is limited in clinical details. The NASS data is a random statistical sample and therefore doesn't necessarily include cases with specific restraint relevance.

SAFETY STUDIES

Mr. CARR. What other safety studies are currently underway and what new safety studies are you planning to initiate in fiscal year 1994?

[The information follows:]

There are three safety studies currently in progress:

Flightcrew in Part 121 Air Carrier Accidents—a detailed assessment of 38 accidents in which the Board cited the flightcrew as causing or contributing to the accident.

The Role of Fatigue in Commercial Vehicle Accidents—An evaluation of 100 single vehicle truck accidents in which the truck ran-off-the-road or rolled over and the driver survived.

Railroad Work/Rest Schedule—The Board is exploring the possibility of developing a means of measuring "normal" work schedules and applying that measure to work schedules of a sample of railroad crewmembers in accidents investigated by the Board.

The FY 1994 Safety Studies Plan is currently being prepared. It is anticipated that one or two new studies will be proposed in both the aviation and highway areas and that one new study will be proposed in both the marine and railroad areas.

AUTOMATED DATA PROCESSING PLAN

Mr. CARR. Your agency has developed a five-year plan to improve its automated data processing capabilities. What progress have you made toward implementing this plan?

[The information follows:]

We have moved aggressively to implement our five year computer plan and we are pleased to report that we are now ahead of schedule on this project. We have installed and upgraded a Digital Equipment Corporation VAX-6510 computer to support the Board's central computing functions including the accident databases, data analysis, and accounting functions. We have also installed new VAX-4000/200 and HP-9000-730 computers in our Engineering Services Laboratory to support data recorder read out and engineering analyses, including flight path reconstruction and graphic simulation. We have replaced an aging office automation system with personal computer work stations that are supported by a Board-wide computer network, and we are in the process of linking our headquarters and regional office computer networks.

In the next two years we plan to enhance the Board-wide network and provide improved communications capabilities between headquarters and the regional offices. We also expect to acquire an additional VAX computer that will be clustered with the existing VAX-6510 to provide enhanced network services as well as a redundant computational resource to increase system reliability.

COMPUTER HARDWARE AND SOFTWARE

Mr. CARR. Your OMB submission includes a request of \$225,000 for computer hardware and software that is not included in the

President's budget. What will be the impact of not providing these resources in fiscal year 1994?

[The information follows:]

The \$225,000 for computer hardware and software that is included in the OMB submission represents year three of the five-year computer plan that the Board has followed to upgrade and modernize both central and desk-top computer facilities. This stage of the computer plan was to have included development of the Board-wide network linking all headquarters and regional offices. A principal item of new equipment called for by this plan is an additional VAX-Server computer at headquarters to handle part of the network load and to serve as a backup to the main VAX-6510 computer. Additional hardware and software to support high-speed network communication between headquarters and the Board's nine regional offices is also included in the plan. Effective data communication capability is extremely important to the maintenance of the aviation accident data base and the railroad accident data base, both of which depend upon data entry from accident investigators in the field. Funds were also requested for the acquisition of high-quality/high-speed printers to provide distributed printing services over the headquarters computer network. The design of the Board-wide network has anticipated the sharing of printers among work groups to provide increased print quality and capacity at reduced cost.

The impact of not providing these resources in fiscal year 1994 will be to delay the completion of the Board's computer improvement plan, to limit electronic communication between headquarters and the regional offices, and to prevent full utilization of computer resources acquired in the past two years by Board staff.

FAA'S HUMAN FACTORS PROGRAM

Mr. CARR. During our hearings with public witnesses, we heard from the Air Transport Association which testified on the need for an enhanced level of funding for the FAA's national plan for aviation human factors. It was also indicated that NTSB Board member, John Lauber, is one of the most knowledgeable experts on human factors research. Dr. Lauber, would you comment on the need for additional emphasis on FAA's human factors program?

[The information follows:]

**National Transportation Safety Board**

Washington, D.C. 20594

April 28, 1993

Office of Member

Honorable Bob Carr
Chairman, Subcommittee on Transportation
and Related Agencies
Committee on Appropriations
House of Representatives
Washington, D.C. 20515

Dear Chairman Carr:

I am pleased to have the opportunity to comment on the Federal Aviation Administration's (FAA) human factors research program. Let me say at the outset that I fully support the position taken by the Air Transport Association (ATA) and others that the program funding should be increased above the level requested by the FAA.

A broad blueprint for a national effort to improve aviation safety through human factors research was developed and published nearly two years ago by the FAA. This "National Plan" was the product of the combined efforts of FAA, National Aeronautics and Space Administration (NASA), and Department of Defense (DoD) personnel on the one hand, and experts from airlines, airframe and avionics manufacturers, pilot unions, and academia on the other. The plan spells out in broad terms human factors research and development efforts which must be accomplished if we are to succeed in significantly reducing aviation accidents attributable to human error; historically, two-thirds of all jet transport accidents involve some form of flight crew error, and the overall incidence of human error is much larger when errors by air traffic controllers, dispatchers, maintenance workers and others are factored in.

"Human error" in this context is not a moral issue, it is rather a systems engineering issue. Complex systems such as the aviation system can be better designed utilizing principles known collectively as "human centered" design. Procedures for use by pilots, controllers, and maintenance personnel can be optimized so that the occurrence of an error can be detected and corrected before it results in an incident or accident. The application of advanced training concepts can also greatly enhance aviation safety. There is little question that a concerted, cooperative national effort could result in a significant improvement in the already very high level of safety of our nation's aviation system.

To accomplish these tasks, two Federal agencies, NASA and the FAA, must lead the way. Both agencies have personnel with the required expertise and necessary support facilities, such as research simulators, to conduct major portions of the National

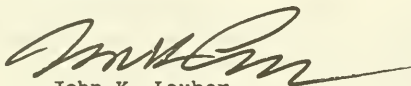
Plan. However, successful accomplishment will require additional efforts by academia, manufacturers, and research organizations. Broad outlines for this work already exist, and funding for the FAA's part of this effort is largely needed to provide the necessary resources, through research grants and contracts, for the conduct of this outside research.

Although I fully support additional funding for the program, I should also note that money alone will not solve these long-standing problems. The FAA must insure adequate institutional support by setting a high priority on the conduct of the research outlined in the National Plan and through the provision of adequate and appropriate personnel and other resources necessary to properly manage this major effort.

Although the Safety Board has not formally adopted a position on this issue, I have shared this letter with my colleagues on the Board. Each of them concurs with the position stated herein.

Again, I appreciate the opportunity to comment on this matter.

Sincerely,

A handwritten signature in dark ink, appearing to read 'John K. Lauber', with a long, sweeping horizontal line extending to the right.

John K. Lauber
Member

cc: Honorable Frank R. Wolf
Ranking Republican Member

AVIATION AND HUMAN PERFORMANCE STUDY

Mr. CARR. Page 56 of the justifications indicates that a study is being conducted to examine fundamental human performance factors in aviation. When do you expect to complete this study?

[The information follows:]

The safety study on flightcrew performance in 38 Part 121 air carrier accidents is currently being written. The report should be completed late this summer.

MODE C INTRUDER SOFTWARE

Mr. CARR. According to the justifications, you are monitoring the FAA's progress in installing mode C intruder logic software to all automated radar terminal system computers. Is the FAA holding to its projected schedule to complete all sites by fiscal year 1995?

[The information follows:]

Recent inquiries by Safety Board staff indicate that the FAA is continuing its concerted effort to install mode C intruder conflict alert logic, and that Agency appears to be adhering to its latest schedule to complete all sites by Fiscal Year 1995.

REJECTED TAKEOFFS

Mr. CARR. Page 13 of the justifications indicates that the procedures for determining the runway length requirement for high energy rejected takeoff, RTO, with required safety margins are inadequate, but the FAA has dropped plans to pursue further rule-making action on aircraft performance related to RTOs and related safety margins. Do you agree with the FAA and what discussions have you had with them on this subject?

[The information follows:]

The Safety Board has recently learned that the FAA will shortly publish final rules that should substantially satisfy the intent of the Board's recommendations on this issue.

AIRCRAFT FATIGUE TESTING

Mr. CARR. The Safety Board has recommended that the FAA require all current certified turbo jet transport category planes, and those certificated in the future, be subjected to full-scale structural fatigue testing. What are the areas of agreement and disagreement between you and the FAA regarding this recommendation, and what steps has the FAA taken toward adopting your recommendations?

[The information follows:]

The Safety Board issued a recommendation following the Aloha Airlines Boeing 737 structural failure in April 1988 to require that both newly certificated airplanes and airplane models in current operation be subjected to full-scale fatigue tests to a minimum of two times the projected economic service life. The FAA believes that this requirement is reasonable for new airplanes, but that, because of the variations in airplane service use and maintenance practices, the testing of older airplanes already in service may not be representative of the fleet or practical. Therefore, the FAA has relegated the issue of older airplane airworthiness assurance to an industry task group that are to provide recommendations for alternate methods to achieve the intent of the Board's recommendation. The Board believes the FAA's approach to be satisfactory. The rulemaking for new airplane fatigue testing has been submitted to OMB, and the OMB response is being reviewed by the FAA. The program review of current airplane airworthiness is scheduled for June.

GROB G103 SAILPLANES

Mr. CARR. What is the status of the FAA's response to your urgent recommendation that the wing spoilers in Grob G103 series sailplanes be inspected to ensure adequate rigging clearance and integral stop blocks?

[The information follows:]

The Federal Aviation Administration issued a Notice of Proposed Rulemaking on March 15, 1993, proposing an airworthiness directive that would require the inspection as recommended by the Safety Board.

FLIGHT RECORDER FIRE TEST REQUIREMENTS

Mr. CARR. The FAA is conducting a study to determine a thermal profile and a test protocol for flight recorder fire test requirements that reflect real-world post-impact fires. What progress has the FAA made in completing the study?

[The information follows:]

On May 26, 1992, the Safety Board issued Safety Recommendation A-92-46 which called for the FAA to conduct the referenced study. In an August 5, 1992 response, the FAA agreed to conduct a research and development project that would fulfill the Safety Board's recommendation.

The project was assigned to the FAA's Technical Center, and work began in earnest after an engineer was hired and assigned to the project in October. A four-phase test plan was developed and implemented. The following is a brief description:

Phase I. Conduct a series of full scale fuel fires to define the average heat flux and flame temperatures that a flight recorder would experience in a real post crash environment. The results will be used to determine the validity of current Technical Standard Order (TSO) requirements.

Phase II. Conduct a series of small scale propane burner tests utilizing the same test elements and instrumentation as Phase I. As with Phase I, the data will be used to determine the validity of the current TSOs.

Phase III. Conduct a literature search to determine the temperatures and heat flux generated by a large natural fire (forest products). This information will be used to determine the long term low temperature certification test.

Phase IV. Conduct high temperature oven tests using temperature profiles obtained from the first 3 phases. The tests will determine if a single combined high and low temperature profile type tests or two separate tests, one high temperature short term and one low temperature long term, should be used.

The Safety Board was recently brought up-to-date on the status of the project. An April 14, project status report, and subsequent phone conversations with the project engineer, provided the following: (1) Phase I completed in February; (2) Phase II 50% completed; (3) Phase III near completion, (4) Phase IV will begin following the expected delivery of a high temperature oven in early May; and (5) Draft report expected in late June.

The Safety Board is concerned that this report will not be expeditiously incorporated into a revised flight recorder TSOs. The Technical Center released a similar test report in 1970, which concluded that the fire test criteria in effect at the time, TSO's C51a and C84 were not adequate. In spite of this, and the issuance of updated flight recorder TSOs (C123, 1991 and C124, 1992) TSOs C51a and C84 remain in effect. The FAA agreed to cancel TSOs C51a and C84 in August 1992, but has yet to take any action.

PIPER PA-25 IN-FLIGHT WING SEPARATIONS

Mr. CARR. Has the FAA responded to your October 7, 1992 letter calling for expedient action to address your safety recommendations concerning Piper PA-25 in-flight wing separations.

[The information follows:]

A review of our records indicate the FAA has not responded to our October 9, 1992, letter calling for expedient action to address Safety Recommendation A-92-36 concerning Piper PA-25 in-flight wing separations.

This safety recommendation asked the FAA to require immediate and recurring inspections of all PA-25 airplanes for evidence of corrosion and cracking in the wing front spar fuselage attachment fitting assembly and to repair, by an FAA-approved method, any fitting assembly containing corrosion or cracking damage.

The NPRM under consideration by the FAA is not urgent action. Therefore, Safety Recommendation A-32-36 has been classified as "Open—Unacceptable Response."

FLIGHT ATTENDANT TRAINING

Mr. CARR. Please include for the record the FAA's response to your safety recommendations dealing with flight attendant emergency procedures training.

[The information follows:]



US Department
of Transportation

Federal Aviation
Administration

Office of the Administrator

800 Independence Ave. S.W.
Washington D.C. 20591

OCT 26 1992

The Honorable Carl W. Vogt
Chairman, National Transportation
Safety Board
490 L'Enfant Plaza East, SW.
Washington, DC 20594

Dear Mr. Chairman:

This is in response to Safety Recommendations A-92-66 through -78 issued by the Board on August 12, 1992. These safety recommendations were issued as a result of several recent accident investigations. The Safety Board found that although flight attendants provided valuable assistance to passengers during emergency situations, they did not always follow their air carriers' approved emergency procedures or perform their duties in accordance with training. The Safety Board reviewed its investigations of accidents and incidents where information was available on flight attendant performance during emergency situations. There were many examples of flight attendants who have performed extremely well, even heroically, during life-threatening emergencies and who were responsible for preventing and/or minimizing injuries to passengers. Nonetheless, there have been many examples of flight attendants who lacked knowledge about emergency equipment and procedures or who acted otherwise contrary to their training. In 2 of the 24 evacuation cases cited in this report, the actions of some flight attendants contributed to an increase in the number of passenger injuries. In some of the other cases, flight attendant actions came very close to increasing the number of injuries. The Safety Board is concerned that these same actions in other situations could have disastrous results and that flight attendant training may not adequately prepare flight attendants for actions that they may be required to take.

A-92-66. Update the proposed Advisory Circular (AC) on Crewmember Cabin Safety Training to include the safety recommendations from this report and previous Safety Board comments on the Notice of Proposed Rulemaking, and expedite the issuance of this AC that was published for comment at 52 FR 44664 on November 20, 1987.

FAA Comment. The Federal Aviation Administration (FAA) agrees with the intent of this safety recommendation but does not plan

to pursue the issuance of the advisory circular (AC) on crewmember cabin safety training. Instead, the FAA will include some of the information contained in the AC in various handbooks. Additionally, the Aviation Rulemaking Advisory Committee (ARAC) Working Group on Cabin Safety has been asked to review the requirements for emergency training contained in 14 CFR 121.417 to determine if additional guidance is needed in conjunction with this regulation.

I will keep the Board apprised of the status of the ARAC review.

A-92-67. Include in FAA Order 8400.10 procedures for approving the reduction in hours of flight attendant recurrent training programs. Specific guidance should be included for granting waivers to reduce hours that takes into consideration the number of types of aircraft for which flight attendants are qualified, the accuracy and effectiveness of training devices and simulators, and the methods used to test and evaluate proficiency.

FAA Comment. The FAA agrees with this safety recommendation and will include guidance material in Order 8400.10 for approving the reduction in hours of flight attendant recurrent training programs.

I will provide the Board with a copy of the revised guidance material as soon as it is issued.

A-92-68. Ensure that flight attendant training programs include instruction on human performance of crewmembers (flight attendants and pilots) and passengers under stressful situations, and on methods to compensate for such behavior.

FAA Comment. The FAA agrees in part with this safety recommendation. The approval and surveillance of air carrier flight attendant training programs include an assessment of how flight attendants are trained to manage situations. Training also includes information on the behavior of passengers in stressful situations during training for hijack events or other occasions where a passenger presents a significant problem to the safety or welfare of the flight. In all phases of training, drills and procedures are conducted in a manner which give flight attendants insights to the stress which could arise during various emergency situations. This training exposes flight attendants to the various emergency situations which might arise and prepares them to address properly different behaviors in actual situations.

The FAA will continue to provide surveillance of flight attendant training programs to ensure that the programs meet

the intent of this safety recommendation. I consider the FAA's action to be completed on this safety recommendation.

A-92-69. Ensure that flight attendant training programs provide detailed guidance on the relative probability of hazards associated with emergency situations such as fire, toxic smoke, and explosion.

FAA Comment. While the FAA agrees that flight attendants should be aware of the consequences of a crash, it does not believe that flight attendants need to know or assess the relative probability of an occurrence. Flight attendants should know that an airplane may break apart, that there may be debris in the aisle, that fire is a likely event, and what to do in the case of toxic smoke. Consequently, the FAA will issue an air carrier operations bulletin (ACOB) to ensure that these subject areas are addressed in flight attendant training programs.

I will provide the Board with a copy of the ACOB as soon as it is issued.

A-92-70. Require flight attendant hands-on proficiency drills for each type of airplane exit, and ensure that flight attendants are evaluated individually by an instructor and that a record is kept that they have performed and successfully completed such drills.

FAA Comment. The FAA does not agree with this safety recommendation to require that flight attendants are evaluated individually by an instructor. Currently, 14 CFR 121.417 requires that once each 24 months crewmembers must operate each type of emergency exit in the normal and emergency modes, including the actions and forces required in the deployment of the emergency evacuation slides. Additionally, records must be kept and must reflect that each crewmember has successfully completed the recurrent training.

I plan no further action on this safety recommendation.

A-92-71. Require that flight attendant training include drills on methods to open exits and to manage flow control at more than one exit if procedures require a flight attendant to be responsible for opening more than one exit.

FAA Comment. The FAA agrees with this safety recommendation. On May 21, 1992, the FAA issued ACOB 1-92-1, Flight Attendant Restraint During a Crash and Emergency Evacuation Second Choice Exit Determination. This ACOB discusses the need for air carriers to review their approved training programs and flight attendant operations manuals to ensure that the procedures used by the individual carriers properly address second choice exit

assignment for flight attendants. I have enclosed a copy of the ACOB for the Board's information.

I consider the FAA's action to be completed, and I plan no further action on this safety recommendation.

A-92-72. Ensure that flight attendant training and procedures for each type of airplane include appropriate consideration of the training and procedures used during joint Part 25 and Part 121 certification evacuation demonstrations.

FAA Comment. The FAA agrees that the procedures used in evacuation demonstrations should be typical of those which would be used by crewmembers in an actual aircraft evacuation. The FAA has asked the ARAC to review this safety recommendation.

I will apprise the Board of the FAA's course of action to address this issue as soon as the review is completed.

A-92-73. Assign separate Cabin Safety Specialists to each major air carrier and to each FAA region.

FAA Comment. The FAA does not agree that a separate cabin safety specialist needs to be assigned to each air carrier. All 14 CFR Part 121 air carriers currently have either a cabin safety specialist or a cabin safety focal point. Many of these cabin safety focal points are located in the FAA regional offices and are available to assist principal operations inspectors assigned to major air carriers.

I plan no further action on this safety recommendation.

A-92-74. Amend 14 CFR Part 121.417 to require an evacuation and/or wet ditching drill group exercise during recurrent training. Ensure that all reasonable attempts are made to conduct joint flightcrew/flight attendant drills, especially for crewmembers operating on airplanes with two-person cockpit crews.

FAA Comment. The FAA does not agree with this recommendation to amend 14 CFR 121.417. The FAA believes that the present training which requires evacuation and ditching drills during initial training, coupled with the exit and equipment drills required for recurrent training, is adequate. However, the FAA has asked the ARAC Subcommittee on Training and Qualifications to examine the possibility of improving training in this area.

I will keep the Board apprised of the results of the subcommittee's review.

A-92-75. Review existing human factors research for the purpose of issuing guidance to Principal Operations Inspectors on methods of evaluating training programs to ensure that flight attendants retain the skills and knowledge that are necessary in emergency situations. If the review of the research does not provide the needed information, the FAA should establish a research program on flight attendant knowledge and skill retention.

FAA Comment. The FAA does not agree with this safety recommendation. The FAA believes that the interval between present flight attendant training sessions is adequate to ensure that flight attendants retain the skills and knowledge that are necessary in emergency situations. The aviation industry has many years of experience with this interval and finds no evidence that the interval should be changed. Furthermore, the quality of the flight attendant training has historically produced flight attendants who function adequately in a full range of emergency situations. The FAA monitors flight attendant performance as part of the surveillance of the carriers and during recurrent training sessions. The FAA is satisfied that flight attendants are trained at frequent intervals to retain the skills and knowledge necessary in emergency situations.

I plan no further action on this safety recommendation.

A-92-76. Update and reissue ACOB 76-4 regarding the operational characteristics of chemically generated passenger supplemental oxygen systems.

FAA Comment. The FAA agrees with this safety recommendation and will revise ACOB 76-4 to address this issue. I will provide the Board with a copy of the revised ACOB as soon as it is issued.

A-92-77. Require that flight attendants receive Crew Resource Management training that includes group exercises in order to improve crewmember coordination and communication.

FAA Comment. The FAA agrees with the intent of this safety recommendation. The ARAC Subcommittee on Air Carrier Personnel Qualifications and Training is developing an AC on crew resource management which includes flight attendants.

I will provide the Board with a copy of the AC as soon as it is issued.

A-92-78. Amend the Federal Aviation Regulations to include ergonomic design requirements for cabin safety equipment, including emergency exits.

FAA Comment. The FAA is reviewing this safety recommendation. I will apprise the Board of the FAA's course of action to address this issue as soon as the review is completed.

Sincerely,


Thomas C. Richards
Administrator

Enclosure

5/21/92

8430.17 CHG 70

*231. AIR CARRIER OPERATIONS BULLETIN NO. 1-92-1--FLIGHT ATTENDANT RESTRAINT DURING A CRASH AND EMERGENCY EVACUATION SECOND CHOICE EXIT DETERMINATION (NTSB SAFETY RECOMMENDATIONS A-91-117 and A-91-118). This bulletin addresses the need for air carriers to review their approved training programs and flight attendant operations manuals to ensure that the procedures used by individual carriers properly address the concerns expressed in this bulletin.

a. The National Transportation Safety Board, in its discussion of several safety recommendations stemming from its investigation of a recent air carrier fatal accident, believes that principal operations inspectors (POI's) should ensure that air carriers emphasize the following:

(1) For air carriers that have a second choice exit assignment for flight attendants (e.g., overwing Type III exits), the need, during training, to evaluate personal risk in a decision to use a closer escape path rather than using the assigned second choice exit. For example, another door or any opening in the fuselage may be more acceptable and more appropriate; and

(2) That during a crash sequence, flight attendants must remain properly restrained and seated in their crew seats until the airplane has come to a complete stop.

b. Procedures in flight attendant manuals and training programs which provide for "second choice" exit assignments for aircraft emergency evacuation should be reviewed. This review should ensure that proper emphasis is given to the concept that such assignments also provide for the use of the nearest available exit or fuselage opening when appropriate.

c. Air carrier training programs often emphasize the need for rapid evacuation following takeoff and landing accidents. On the other hand, it is often difficult for flight attendants involved in such accidents to determine when an aircraft has come to a complete stop. This lack of a combination of cues (e.g., motion, deceleration, etc.) can result in flight attendants releasing their seatbelts prematurely. If the aircraft experiences a sudden deceleration while a crewmember is unsecured, the result may be incapacitation to that crewmember and an increase of passenger evacuation time. Therefore, crewmember training should emphasize the importance of crewmembers remaining seated and properly restrained until the aircraft has come to a complete stop and should identify techniques to aid crewmembers in making that determination.

d. The POI's of operators who use flight attendants in their operations shall bring the contents of this bulletin to the attention of their assigned certificate holders. Also, POI's of these certificate holders shall encourage them to emphasize to their flight attendants during training in a crash scenario the following: the need for them to evaluate personal risk in a decision to go to a second choice exit; and the need for them to remain seated and properly secured until the aircraft comes to a complete stop.

232.-300. RESERVED.

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CHILD RESTRAINTS ON AIRCRAFT

Mr. CARR. Why does the Safety Board believe that the FAA should require, not just permit, the use of child restraint systems aboard aircraft?

[The information follows:]

The Safety Board continues to believe that infants and small children must be restrained by FAA-approved restraint systems in general aviation and air carrier aircraft. We have been concerned for some time that the Federal Aviation Administration has not adequately addressed the use of infant occupant protection, and we do not believe that voluntary use of child safety seats is an appropriate means of ensuring occupant safety.

Accident investigations have repeatedly shown problems with the safety and survivability of unrestrained infants and small children who have been involved in survivable crashes or incidents in which turbulence was encountered. The Board notes the irony that adult passengers, television monitors, and coffee pots are required to be restrained in the event of an accident or in-flight turbulence. Infants and small children are not afforded the same degree of protection.

Mr. CARR. What airlines currently permit the use of child safety seats?

[The information follows:]

A Federal Aviation Administration regulation that went into effect on October 15, 1992, requires that all airlines permit the use of child safety seats and other devices that have been approved by the FAA and foreign certification agencies. The Safety Board responded that the regulation falls short of requiring infants and small children to be adequately protected during accidents and in-flight turbulence as recommended by the Board. The Safety recommendation has been classified "Open—Unacceptable Response."

SCHOOL BUS SAFETY

Mr. CARR. What progress has NHTSA made in addressing your recommendations to upgrade Federal safety standards for school buses pertaining to seating material flammability and fuel system integrity?

[The information follows:]

The Safety Board recommendations to NHTSA on school bus seating material flammability and fuel system integrity are currently classified as "Open—Acceptable Action." The NHTSA is developing additional test and research data that would help define the proper approach for regulations in this area.

ADMINISTRATIVE LICENSE REVOCATION LAWS

Mr. CARR. Currently, 18 States do not have laws providing for the administrative revocation of the licenses of drunk drivers. What new strategies can be adopted to encourage States to pass such laws?

[The information follows:]

Currently, 34 States and the District of Columbia have administrative license revocation laws. In the last year, the States of Nebraska, Ohio, New Hampshire, Idaho and Virginia have enacted ALR laws. Legislation is pending in Texas, South Carolina and Pennsylvania.

The Safety Board participates in a national coalition of over 30 organizations to promote ALR legislation in the states. The national, state and local coalitions and other organizations have had a major role in the progress made to date. We are confident that most of the nation will be covered with ALR laws in the next few years. Congress may want to consider financial incentives to the remaining states in addition to other incentive grant programs under 23 USC 408 and 23 USC 410.

ADJUSTABLE UPPER ANCHORAGES

Mr. CARR. What was the basis for NHTSA's negative response to NTSB's recommendation that NHTSA evaluate the possibility of requiring an adjustable upper anchorage feature for shoulder safety belts? Do you continue to believe that regulation in this area is necessary or desirable?

[The information follows:]

The NHTSA's most recent correspondence related to safety recommendation H-88-10, on February 20, 1991, stated that available data did not reveal a difference in safety belt use rates among occupants of different sizes which would enable the agency to conclude that adjustable upper anchorages (AUAs) would significantly increase safety belt use, and thus improve motor vehicle safety. Further, the NHTSA stated that there was no evidence that current safety belt systems create a hazard for small adults and children. The agency did indicate that it was supportive of the Safety Board's recommendation to the automobile manufacturers that they voluntarily install AUAs. As a result of the recommendation to the automobile manufacturers, AUAs are now available on the majority of newly manufactured automobiles. The Board will soon discuss whether, as a result of this positive response from the automobile manufacturers, to remove the recommendation for AUAs from its "Most Wanted" list of safety recommendations. At this time, the Safety Board does not believe that regulation in this area is necessary.

HOURS OF WORK/HUMAN FATIGUE

Mr. CARR. Page 23 of the justifications indicates that a prolonged and sustained effort will be needed to address issues related to hours of work/human fatigue. To what issues should the Department of Transportation be directing its attention for priority emphasis?

[The information follows:]

We believe priority attention should be given to research on the effects of shift work and the attendant issue of safety in the work place, including the long-term consequences on individual health and public safety. This research should be focused on the need to upgrade regulations governing hours of service for all transportation modes.

The National Transportation Safety Board has found evidence that fatigue has contributed to transportation accidents and, as a result, it believes that the Department of Transportation should place a high priority on this issue. The Safety Board is quite concerned about the potential effects of disruptive work/rest cycles and fatigue on transportation safety. Operators who are subject to these effects, such as pilots who regularly fly long, east-west routes where multiple time zones are crossed, could be performing tasks that require a high level of cognitive skills. More important, these tasks could occur when their body clocks are at a resting level. The Safety Board has closely monitored the results of recent studies of disrupted circadian rhythms and fatigue on the performance of both long haul and short haul pilots, and routinely gathers data relating to operator work/rest cycles during accident investigations.

RAILROAD EVENT RECORDERS

Mr. CARR. The FRA issued a NPRM on June 18, 1991, concerning the installation and use of event recorders in locomotives, but no final rule has been issued. Has the FRA had any further dialogue with you and are you aware of the reasons for the delay in issuing the final rule?

[The information follows:]

FRA has stated that the event recorder rule is moving forward. NTSB has not yet seen the proposed final rule.

ON BOARD STAFF POSITIONS

Mr. CARR. Please provide for the record the current on board staff by type of position for each Board member.

[The information follows:]

Office	Position
Chairman Carl W. Vogt.....	Special Assistant, Confidential Assistant Secretary.
Vice Chairman Susan M. Coughlin.....	Special Assistant.
Member John K Lauber	Special Assistant, Confidential Assistant.
Member John A. Hammerschmidt.....	Special Assistant, Confidential Assistant.
Member Christopher A. Hart.....	Special Assistant, Confidential Assistant.

POLICY AND DIRECTION STAFFING

Mr. CARR. Your OMB submission included a request for 47 FTEs in fiscal year 1994 for the Office of Policy and Direction, including three additional attorney positions. The President's budget, however, includes a reduction of one attorney FTE. What was the rationale for requesting additional legal staff in your September submission?

[The information follows:]

The additional attorney positions were requested due to (1) the need to reduce the backlog in enforcement cases at the Board level, (2) an increase in accident investigation related workload and the newly-imposed mandates of executive branch ethics law, and (3) in anticipation of new workload arising out of the civil penalty transfer.

Mr. CARR. What will be the impact of one fewer attorney position in policy and direction?

[The information follows:]

At the level of staffing proposed in the President's budget, the Office of General Counsel cannot meet in a timely fashion its obligations under the ethics laws and the safety enforcement program, while continuing to assist the Board in its accident investigation function.

PUBLIC AFFAIRS, CONGRESSIONAL AFFAIRS AND GENERAL COUNSEL
WORKLOAD DATA

Mr. CARR. Please provide for the record any workload data you have for your offices of public affairs, congressional relations, and general counsel.

[The information follows:]

The Board's Offices of Congressional and Intergovernmental Relations and Public Affairs do not maintain specific workload data.

The Office of General Counsel closed 199 and 266 enforcement appeals in fiscal year 1991 and 1992, respectively. Based on the first six months of fiscal year 1993, it is anticipated that an additional 280 cases will be closed in fiscal year 1993.

LITIGATION

Mr. CARR. The OMB justifications reference an "increasing amount of litigation arising out of NTSB's accident investigations." What is the nature of this litigation?

[The information follows:]

There is no one single category of case that explains the rise in accident investigation related litigation. Part of the rise is explained by an increase in the association of criminal prosecution with transport accidents, a fact which frequently involves a

significant increase in the need for legal assistance in securing evidence and coordinating investigations. There is also an increasing need for legal representation in the deposition of Board employees. The development of the doctrine of spoliation of evidence in California and Illinois tort law has also added legal complications to the accident investigation work. Finally, there has been an increase in workload surrounding the availability of drug tests for civilian and government workers involved in accidents.

Mr. CARR. Please provide annual workload data regarding litigation addressed by the NTSB for fiscal years 1987 through 1992.
[The information follows:]

Accident investigation related legal work does not readily lend itself to statistics and they have not been maintained. In the past year, there has been a significant expenditure of time on cases related to the access to wreckage in the Colorado Springs accident, the application of new CVR legislation, compliance with subpoenas for essential accident investigation information, and challenges to the Board's restrictive stance on the scope of permissible testimony of its employees in litigation arising from accidents we investigated.

EMERGENCY APPEALS FILED

Mr. CARR. The OMB justifications refer to a significant increase since 1990 in emergency appeals filed with the Board. Please provide annual data on number of emergency appeals filed with the Board since 1989.

[The information follows:]

Emergency Appeals Filed With the NTSB

Fiscal Year	Emergency Appeals
1989.....	63
1990.....	112
1991.....	185
1992.....	166
1993 (as of April 15, 1993).....	47

APPEAL DISPOSITION

Mr. CARR. Also, please provide annual data on the number of nonemergency appeals filed with the Board since 1989, and the number of appeals disposed of in each year.

[The information follows:]

APPEALS CLOSED

FY	Non-emergency appeals filed	Emergency appeals filed	Non-emergency appeals closed	Emergency appeals closed
1989.....	1,043	63	1,044	63
1990.....	815	112	933	112
1991.....	675	185	805	185
1992.....	602	166	753	166
1993.....	¹ 237	¹ 97	¹ 327	¹ 97

¹ As of April 15, 1993

CONFERENCES AND SEMINARS

Mr. CARR. Please update for the record the information regarding conferences and seminars that was included on pages 213 through 216 of last year's hearing record.

[The information follows:]

OFFICE OF RESEARCH AND ENGINEERING
1992 Training Attended by Technical Staff

<u>Position</u>	<u>Training Course</u>	<u>Hours</u>
Chief, Analysis & Data Div.	System 1032 DB Admin.	16
Chief, Engineering Serv. Div.	How to Spark Enthus.	8
	Legal Aspects Hiring/Firing	6
Chief, Haz. Mat. Div.	Perf. Stand. Dev.	24
Chief, Materials Lab Div.	Perf. Stand. Dev.	24
Chief, Safety Studies Div.	Brief Field Inves.	6
	Managing Diff. People	8
	Intro. Stat. II	30
Aerospace Engr.	Flt. Test Principles	40
Aerospace Engr. (2)	FDR Training	40
Aerospace Engr. (2)	Fund. Avionics Consid.	40
Aerospace Engr.	Fundamentals of GPS	8
Aerospace Engr. (3)	System Familiariza. B-757/767	32
Computer Systems Analyst	VMS Mgmt. II	40
Computer Systems Analyst	VMS Sys. Prf. Mgmt.	40
Computer Systems Analyst	VMS Sys/Network Mgmt.	40
Computer Systems Analyst	System 1032 DB Admin.	16
Electrical Engineer	Training on Canadian Software	24
Haz. Mat. Accident Investig. (2)	Tank Car Safety	40
Haz. Mat. Accident Investig.	Mgmt. Skills Develop.	40
Haz. Mat. Accident Investig.	Chem. of HazMat	80
Metallurgist	Welding Inspec/Quality Control	40
NRS (Chemistry)	FAA Explosives Workshop	16
NRS (Metallurgist)	Intro. to Supervision	16
Trans. Safety Spec. (TSS)	Writing Course	21
TSS	Multivariate Methods	42
TSS	Validity Test CA Truck Stop	64
TSS	Aviation Ground School	54
TSS	Test Procedures (TRCKFTG)	6
TSS	Human Factors Meeting	40
TSS	Critical Thinking	18
TSS	Computer Info. Briefing	8
TSS	Visit EMD Facilities	8
TSS	Brief Field Invest.	6
TSS (CVR)	CVR Training (2 manufactur.)	64
TSS (Failure Analysis) (2)	FAA Explosives Workshop	16
TSS (Failure Analysis)	Fratography Course	40

SEMINARS ATTENDED BY RESEARCH AND ENGINEERING STAFF

<u>Positions</u>	<u>Seminar</u>	<u>Hours</u>
Deputy Director	TRB; Human Factors	24
Chief, Analysis & Data Div.	Career Devel. Seminar	7
	FOSE Conf.	24
Chief, Safety Studies Div.	TRB; Human Factors	4
	Auto Safety Found. Symp.	8
Computer Specialist	FOSE Conf.	24
	System 1032 Users Conf.	16
NRS (Chemistry)	TRB Workshop on Alcohol	24
Trans. Safety Spec.	ECDIS '92 Conf.	20
Trans. Safety Spec.	TRB; Human Factors	20
Trans. Safety Spec.	Nat'l. Water Safety Cog.	16

OFFICE OF AVIATION SAFETY
1992 Training Attended by Technical Staff

<u>Position</u>	<u>Training Course</u>	<u>Hours</u>
Trans. Safety Spec.	ATCA Assn. Annual Mtg.	40
Aviation	Train the Trainer	7
	Basic A/C Rescue & F. Fighting	40
	COMDEX '92 Comp. Conf.	
	Avia. Emerg. Response School	40
	Excel 301	60
	Computer Comm. & Network	
	ATR-72 Indoctrination	56
	Basic Aircraft Acc. Inv.	
	Leadership & Mgt. Training	40
Supervisory Air Safety Inves.	Contemporary Exec. Deve.	
Aviation	Intro to Windows	8
	NW Airlines Maj. Acc. Familiar.	40
	COMDEX '92 Comp. Conf.	
	Empowerment Workshop	
	Overcoming Adversity	4
	Assertiveness Skills for Mgrs.	
	Acc. Prevention & Inves.	80
	Leadership & Mgt. Training	40
Air Safety Investigator (2)	Intro. to Windows	4
(7)	Pilot Proficiency-FIT	32

	Intl. Airport Safety Mgt. Sem.	40
(3)	NW Airlines Maj. Acc. Inves.	40
	Basic Accident Inves.-USC	80
	AMT Course for A&P Certif.	200
(3)	Human Factors in Aviation	
	Word Perfect for Windows	16
(2)	Beginning DOS	8
	Intro. to Computers	8
	Jet Engine Mishap Inves.	
	Helicopter Acc. Inves.	
(3)	Saab 340 Indoc.	64
	ATR-72 Indoc.	56
	Intro to dBase IV	8
	Rotorcraft Saf. & Acc. Inves.	
	Army Acc. Inves.	
	Future A/C & Spacecraft	
	AMT Conf.	16
	Airplane Flight Dynamics	
(2)	Air Carrier Indoc.	104
	Air Carrier Ops. Inspec. Indoc.	
(19)	Leadership & Mgt. Training	40
(6)	Boeing 757/767 Systems Trng.	32
(6)	Composite Materials Analysis	40
(3)	Basic Aircraft Acc. Inves.	80
(25)	Proj. Mgt. & Air Traf. Ctrl.	
(4)	Flight Recurrency Program	24
Human Performance Investigator	ATR-72 Ferry Flight Observ.	56
	Boeing 757/767 Systems Trng.	40

SEMINARS ATTENDED BY AVIATION STAFF

Leadership, Project Mgt. & Negotiations
 8th Annual Leadership Conference
 Basic Crash Survival Investigation School
 Airplane Preliminary Design
 Self Improvement
 ATR-42, Line Maintenance Familiarization
 Workforce 2000, Writing
 Beyond Secretary
 PC Expo
 EEO Training
 Staff Assistant Conference
 Professional Development for Women
 Intro. to Copyediting
 Improving Editing Skills
 Aircraft Fire Protection/Mishap Invest.

Communication Skills
 Substantive Editing
 Intro. to Public Administration
 Engineering Maintenance & Material Forum
 Verba. Communications
 Data Handling for Budget
 Getting the Most from WordPerfect
 Stress Reduction Workshop
 Contemporary Executive Development
 ACCELL/SQL
 6th Conf. on Mountain Meteorology
 Flight Safety Fnd.-International Seminar

OFFICE OF SURFACE TRANSPORTATION SAFETY
 1992 Training Attended by Technical Staff

<u>Position</u>	<u>Training Course</u>	<u>Hours</u>
Director, Surface Transportation Deputy Director	Leadership & Mgmt, Phase I	36
	Tanker Legislation '92	16
	Orientation for New SES	16
	1992 SNAME Annual Mtg & Expo	16
	Coaching & Counseling	24
	1991 SNAME Annual Mtg & Expo	16
Chief, Human Performance	Strategic Planning	24
	Project Management	24
	SNAME Mgmt on BRM	8
	Marine Drilling Rig Presentation	8
	Commercial Fishing Operations	8
	5.0 WordPerfect	4
	Writing Performance Standards	24
	Biological Rhythms in Industry	8
	Presentation by Amtrak	4
	HRM Training	16
Human Performance Investigator (3)	Strategic Planning	24
(2)	Biological Rhythms in Industry	8
(3)	Project Management	24
(1)	SNAME Mgmt on BRM	8
(1)	SNAME Lifboat Subcommittee	8
(1)	Ford Briefing on Ergonomics in Auto Ind.	8
(3)	Commercial Fishing Operations	8
(3)	5.0 WordPerfect	4
(1)	Small Boat Acc. Invest.	24
(1)	Report Writing	8

	(3)	Presentation by Amtrak	4
	(3)	BRM Training	16
Chief, Survival Factors Div.		Project Management	24
		Report Writing	24
		Common Sense Supervision	40
		Training Needs Assessment Test	
		Sexual Harrassment & EEO Training	
Human Performance Invest.	(2)	Biomechanics & Hgwy Acc. Prev.	8
	(1)	Amtrak On-Board Ser. Emer. Training	8
	(1)	Human Factors & Human Error	8
	(3)	Project Mgmt	24
	(5)	Report Writing	24
	(1)	Writing & Editing	40
	(5)	Training Needs Assessment Test	
	(1)	Petroleum Tankship Operations	24
	(4)	Injury & Biomechanics & Emer. Ops	16
	(2)	Leadership & Mgmt, Phase I	36
Chief, Railroad Div.		Project Management	24
		Reports Writing	24
		Strategic Planning	32
Chief, Majors RR Branch		Surface Orientation & Technology Writing	40
		Reports Writing	24
		Railway Technology Expo: Bridge & Builders	32
		AREA 1992 Meeting: Steel Structures	3
		Leadership & Mgmt, Phase I	36
		Strategic Planning	32
		Project Management	2
RR Regional Directors	(1)	Strategic Planning (2 sessions)	64
	(3)	Project Management	24
	(1)	WordPerfect 4.2	8
	(1)	Leadership & Mgmt, Phase I	36
	(1)	Technical Writing	56
	(3)	Strategic Planning	32
RR Acc. Investigator	(1)	Technical Writing	56
	(3)	Leadership & Mgmt, Phase I	36
	(1)	UVA: High Performance Workplace	
		UPA: Strategic Planning	
		Risk Management	
		Leadership in Today's Business	
		Organization Development	
		Entrepreneurship	
		Contemporary Management	
	(1)	Efficiency Testing & NORAC Op Rules	16
		NTL Management: Human Relations	56
		WordPerfect 5.0	8
	(4)	Surface Orientation & Technical Writing	24

Quality Assur. Spec.	Strategic Planning	32
	Burlington Northern ARES	8
	CSX: Traffic Control System	8
Trans. Safety Spec. (3)	Project Management	24
(3)	Strategic Planning	32
(3)	Report Writing	24
Chief, Highway Div.	Project Management	24
	Truck Driver Fatigue	
	Report Writing	24
	Performance Standards Training	24
	Negotiations Skills	
	EEO Training for Supervisors	8
Chief, Majors Hwy Branch	Project Management	24
	Common Sense Supervision	
	Truck Driver Fatigue	
	EEO for Supervisors	8
	Report Writing	24
	Leadership & Mgmt, Phase I	36
Regional Directors (4)	Project Management	24
(4)	Truck Driver Fatigue	
(4)	Reports Writing	24
(3)	Performance Standards Training	24
Chief, Technical Services Branch	Project Management	24
	Truck Driver Fatigue	
	Report Writing	24
	EEO for Supervisors	8
	Mgmt Skills for First Line Supervisors	
Highway Engineer (1)	Leadership & Mgmt, Phase I	36
(2)	Truck Driver Fatigue	
(1)	Intro to the Personal Computer	8
(3)	Project Management	24
Hwy Accident Investigator (2)	Leadership & Mgmt, Phase I	36
(2)	Ethics, Conduct Overview	8
(1)	Crash Reconstruction	
(1)	Improving Managerial Skills for New or Prospective Mgrs.	24
(1)	PC DOS 5.0 Fundamentals	8
(1)	WordPerfect 5.0 Essential Skills	8
(1)	Briefing & Presentation Skills	8
TSS (Heavy Vehicle)	Heavy Duty Truck Mechanics	16
TSS (Hwy/Pipeline)	Grade Crossing Collision Invest.	24
Chief, Marine Accident Div.	Project Mgmt. Tech. Workshop	24
	Superv. & Group Perf. by OPM	40
	Intl. Marine Acc. Forum	24
	Demo. of Simulator Equip.	8
	Tanker Legis. 92	16

Deputy Chief, Marine	Project Mgmt. Tech. Workshop	24
	Human Perf. Seminar	8
Marine Acc. Investigator (3)	Project Mgmt. Tech. Workshop	24
(3)	Technical Report Writing	24
Chief, Pipeline Div.	Project Management	24
	Strategic Planning	24
	Role of Supervisors & Mgrs in EEO	8
	Rewriting Performance Standards	24
Petroleum Engineer	Leadership & Mgmt, Phase I	36
	Pipeline Failure Invest. Techniques	40
	Liquefied Natural Gas Safety Technology	
	& Inspection	40
	Safety Eval. of Pipeline Systems	40
	Gas Pressure Regs. & Overpressure	
	Protection	40
Chief, Editorial Services Div.	Project Management	24
	Leadership & Mgmt, Phase I	36
	Technical Management	8
	OPM Intro. to Supervision/Mgmt	8
	Performance Standards That Make Sense	24
	Intro. to Desktop Publishing	8
	Intro. to Windows	8
Technical Publications Editor (4)	Project Management	24
(1)	Technical Writing	8
(3)	Intensive Review of Grammar	8
(2)	Leadership & Mgmt, Phase I	36
(3)	Fishing Vessel Training	8
(1)	Report Writing & Editing	8
(1)	The Writing Cycle	40
(1)	Advanced Editing	8
(1)	Writing & Editing for Science & Tech.	8
(4)	Intro to Windows	8

SEMINARS AND CONFERENCES FOR SURFACE TRANSPORTATION

Human Performance Seminar
 Truck Drivers Fatigue Seminar
 Ergonomics Seminar
 Biorobotics Seminar at MIT
 Advanced Human Interaction Conf.
 ATCS Seminar, Wessex Inst. of Tech.
 Pro-Retirement Seminar
 UIL: Air Brake Seminar
 Amtrak Efficiency Testing Seminar
 CalPro, Trailer Train Conf.

Railway Technology & Equipment Expo
 AAR Technical Conf., Commun., Signals
 Metro Red Line Safety Seminar
 Assoc. Railway Op. Officers Tech. Seminar
 2nd Annual. World Traffic Safety Seminar
 Natl Research Board Sem. on Human Factors
 Natl Research Board Sem. on Alcohol Impacts in Rec. Boating Safety
 Offshore Technology Conference
 Training Seminar on Drill Rig Ops
 Human Performance Sem. on Circadian Rhythm & Sleep Disruptions
 OPA 90, 2nd Ann. Conf. at USMMA
 California Gas Assoc. Seminar
 Mack Truck Seminar
 Symposium on Operation Lifesaver
 Technology Conf. of Coordinated Mechanical & B + B Associations

AVIATION SAFETY STAFFING

Mr. CARR. You are requesting \$13.333 million and 127 FTEs for the Office of Aviation Safety, a reduction of three FTEs from the authorized staffing level and 10 FTEs fewer than your OMB request. To what extent will your proposed reduction in staffing affect your accident investigations?

[The information follows:]

The planned 3 FTE reduction from aviation's current authorization will be dealt with through a realignment of the Headquarters organization within the Office of Aviation Safety and through administrative attrition. We are anticipating no adverse impact to our current level of accident investigation or in meeting our statutory mandate.

Mr. CARR. How would the additional FTEs proposed in the OMB submission be used and how were they justified?

[The information follows:]

The requested FTE within the Office of Aviation Safety of 137 is the mature authorization which would allow for resources to adequately address the rising number of foreign accidents involving U.S. manufactured aircraft or operators where the NTSB serves as accredited representative. Additionally, it provides for more timeliness of reports, more effective attrition planning in our technical staff, allows for at least 3 specialists in each discipline, and allows for more depth in general aviation and field investigations.

SURFACE TRANSPORTATION STAFFING

Mr. CARR. You are requesting \$9.467 million and 56 FTEs for the Office of Surface Transportation Safety, a reduction of three FTEs from the authorized staffing level and 12 FTEs fewer than your OMB request. Your OMB request proposed enhanced staffing levels for a specialist in human performance in rail accidents and bridge engineering in highway accidents. Yet, these areas are targeted for staffing reductions under the President's budget. Why have you changed your mind about the need for technical specialists in these areas?

[The information follows:]

The planned 3 FTE reduction from surface transportation's current authorization will be dealt with through administrative attrition. We do expect a slight reduction in accidents investigated.

Mr. CARR. How would the additional 12 FTEs proposed in the OMB submission be used and how were they justified?

[The information follows:]

The additional 12 FTEs in the OMB budget would be used for 2 railroad human performance investigators, a railroad investigator-in-charge, a railroad survival factors specialist, a highway investigator-in-charge, 2 highway bridge engineers, a highway survival factors specialist, 2 marine survival factors specialists, a marine investigator-in-charge, and a pipeline survival factors specialist.

The positions would provide for more timeliness of reports, more specialists in each division, and would allow for more depth in investigation selection.

SURFACE SAFETY RECOMMENDATIONS

Mr. CARR. Please provide for the record the three highest priority safety recommendations that you have made to each surface administration that remain in open status, including the nature of the recommendation and the date it was first made.

[The information follows:]

The three highest priority safety recommendations in the surface modes are:

Pipeline

Excess Flow Valves: Since a 1971 special study, the Board has called for a study to develop standards for a rapid shutdown of failed natural gas pipelines (P-71-1). Similar recommendations were issued in 1973, and 1976. In 1980, the Board asked RSPA to expedite rulemaking to require installation of excess flow valves on all newly installed or renewed high-pressure gas distribution system service lines. Similar recommendations were issued in 1981 (P-81-9). It is our understanding that RSPA has recently issued a NPRM on excess flow valves.

Employee Training: Since 1987, the Safety Board has asked RSPA to amend 49 CFR Parts 192 and 195 to require that operators of pipelines develop and conduct selection, training, and testing programs to annually qualify employees for correctly carrying out each assigned responsibility which is necessary for complying with CFR Parts 192 and 195 as appropriate. In January, 1993, the Board classified this recommendation (P-87-2) as "Open--Unacceptable Response".

Remote-operated Valves: Since 1970, the Board has called for a FRA study to develop standards for a rapid shutdown of failed liquid pipelines (P-71-1). Similar recommendations were issued to RSPA, in 1990 and 1991 to require the installation of remote operated valves on pipelines that transport hazardous liquids, and base their spacing on the population at risk. Currently this recommendation is classified "Open-Unacceptable Response".

Highway

Administrative License Revocation: An administrative license revocation would allow the police to confiscate, on the spot, the license of a driver who either fails or refuses a breath test. This revokes the licenses of dangerous drivers more quickly and the public is deterred from drinking. The recommendation was first issued in April 1983.

Mandatory Use Laws: Mandatory use laws (MULs) are an effective way to increase the use of lap/shoulder belt systems. Currently, eight states have not passed MUL for seatbelts. The recommendation was issued in March 1988 with the publication of the Safety Board study on the performance of lap/shoulder belt systems in 167 crashes.

Heavy Truck Brakes: The directional instability of heavy trucks while braking would be greatly improved with the installation of anti-lock braking systems on air braked vehicles. The Safety Board issued the recommendation to NHTSA for a performance standard requiring the use of anti-lock brakes in its April 1992 study on Heavy Vehicle Airbrake Performance.

Marine

Certification and Inspection of Commercial Fishing Vessel Safety: In 1987, the Safety Board issued a safety recommendation to the Coast Guard to seek legislative authority to require that all uninspected commercial fishing vessels be certified and periodically inspected by the Coast Guard or its recognized representative to ensure that the vessels meet all applicable Federal safety standards. Recommendation M-87-64 is currently classified as "Open-Unacceptable Action."

Licensing of Captains of Commercial Fishing Vessels: In July 1985, the Safety Board issued a safety recommendation to the Coast Guard that it seek legislative authority to require the licensing of captains of commercial fishing vessels, including a requirement that they demonstrate minimum qualifications in vessel safety including rules of the road, vessel stability, firefighting, watertight integrity, and the use of lifesaving equipment. Recommendation M-85-68 is currently classified as "Open-Alternate Acceptable Action."

Lifesaving Equipment on Passenger Vessels: In July 1986, the Safety Board issued a safety recommendation to the Coast Guard that it require that all passenger vessels except for ferries on river routes on short runs of 30 minutes or less have primary lifesaving equipment that prevents immersion in the water for all passengers and crew. Recommendation M-86-61 is currently classified as "Open-Acceptable Action."

Railroad

Positive Train Separation: Since 1987 the Safety Board has called for the development and installation of advanced train control systems for the purpose of positive train separation. The most recent safety recommendation issued on this subject was issued July 9, 1991. Recommendation R-91-25 is currently classified as "Open--Acceptable Action."

Railroad Tank Cars Carrying Hazardous Materials: On February 12, 1990, the Board issued a recommendation to the Department of Transportation requesting that it evaluate present safety standards for tank cars transporting hazardous materials by using safety analysis methods to identify the unacceptable levels of risk and the degree of risk from the release of a hazardous materials, and then modify existing regulations to achieve an acceptable level of safety for each product/tank car combination. The DOT is studying this matter and safety recommendation R-89-90 is classified as "Open--Acceptable Action."

Rail Rapid Transit Safety: About 1.8 billion passengers ride on the rail rapid transit systems operating in the United States annually. In conjunction with a safety study on rail rapid transit safety, the Safety Board asked the Federal Transit Administration to document and evaluate the effectiveness of existing State oversight activities of rail rapid transit safety and develop guidelines for use by State and local governments that address the critical elements of an effective oversight

program. Safety recommendation R-91-34 is currently classified as "Open-Acceptable Response."

Intermodal

Cross Modal Human Fatigue/Hours of Work Policy: In its investigations of numerous accidents in all transportation modes, the Safety Board has identified serious and continuing problems concerning the far-reaching effects of fatigue, sleepiness, sleep disorders, and circadian factors in transportation system safety. It has become apparent to the Board that neither management or labor in transportation properly considers the adverse effects of irregular and unpredictable cycles of work and rest on vehicle operating personnel. The Safety Board supports a systemic approach to the problem.

On May 12, 1989, the Safety Board issued three safety recommendations to the Secretary, Department of Transportation regarding this matter. Those recommendations are:

Expedite a coordinated research program on the effects of fatigue, sleepiness, sleep disorders, and circadian factors on transportation system safety. I-89-1

Develop and disseminate educational material for transportation industry personnel and management regarding shift work; work and rest schedules; and proper regimens of health, diet, and rest. I-89-2

Review and upgrade regulations governing hours of service for all transportation modes to assure that they are consistent and that they incorporate the results of the latest research on fatigue and sleep issues.

The recommendations are currently classified as "Open--Acceptable Action."

RESEARCH AND ENGINEERING STAFFING

Mr. CARR. What impact will the proposed staffing reduction of one FTE in flight data recorder in the Office of Research and Engineering have on your ability to conduct thorough and timely aviation accident investigations?

[The information follows:]

Flight recorders are appearing more frequently in aircraft involved in accidents and incidents because of FAA rulemaking that requires certain commuter airplanes to be equipped with FDRs as of October, 1991. Also, the flight recorders carried by all categories of aircraft are becoming more complex. Prior to 1988, the typical FDR received by the NTSB had 5 parameters recorded. The FDRs the Safety Board Currently receive typically have more than five parameters recorded. As time goes on, the number of parameters expected for each FDR readout grows because recorders on newer airplanes such as the ATR 42 and Boeing 767, record hundreds of parameters on the FDR. Additionally, by May, 1994, most existing 5 parameter recorders must be replaced with 11 parameter recorders.

In FY 1993, the Office of Research and Engineering developed new procedures to reduce the average processing time for FDRs, and the average processing time went from 132 days to 50 days. It is not likely that we can compress this processing time further, in fact, we expect that the processing time will grow with the continuing growth in the complexity of the FDRs.

Furthermore, the FDR specialists accomplish a great many other investigation activities in addition to processing FDRs. The FDR specialists also analyze FAA recorded radar data to provide flight paths and aircraft performance assessments for accidents and incidents. They also do some limited aircraft performance work under the guidance of the full time aircraft performance engineers. In FY 1992, for example, the FDR specialists and the aircraft performance engineers provided accident investigation support for 115 activities over and above the FDR readouts.

The Office of Research and Engineering is responsible for writing safety recommendations for FDRs, and for participating in the development of FDR standards. The FDR specialists must provide the technical basis for the recommendations and participate in these activities.

The timeliness of our FDR readouts and analyses will clearly suffer if there is a reduction in staff. It is likely, also, that the involvement of our FDR specialists in other phases of accident investigation will have to be reduced, thus compromising the thoroughness of these investigations.

Mr. CARR. How would the additional five FTEs proposed for the Office of Research and Engineering in the OMB submission be used and how were they justified?

[The information follows:]

The additional staffing for the Office of Research and Engineering that is proposed in the OMB submission is intended to expand the technical/professional capabilities of the Office in a number of important areas.

Two positions are requested in the Engineering Services Division, one for a Cockpit Voice Recorder Specialist and one for an Aircraft Performance Engineer. At present we have only two staff members in each of these areas and the additional staffing will provide needed depth of coverage to contend with a steadily increasing workload in support of aviation accident investigations.

A materials engineering position is requested in the Materials Laboratory to provide both on-site accident investigation and laboratory analysis in support of accident investigations in all transportation modes that involve material failure analysis. It is our goal to provide all material failure analysis in-house for both field and major investigations, and additional staffing is required to provide timely support to these investigations.

An Investigator-In-Charge position is requested for our Hazardous Materials Division to increase IIC staffing to three persons. While only one or two major hazardous materials investigations are conducted each year, our investigators provide extensive on-scene support for hazardous materials issues in investigations directed in highway, rail, and other transportation modes. In addition, an important responsibility of the Hazardous Materials Division is the conduct of special investigations such as the recent study of railroad tank car inspection procedures after the discovery of fatigue cracks in a number of separate investigations.

A computer systems analyst position is also requested for our Computer Services Division. During the past two years the Board has made a concerted effort to develop and maintain all critical computer applications in-house, rather than to contract with outside vendors for programming services. The policy has been pursued to ensure control and responsiveness in the development of these systems, and because it has been found to be far more economical than contracting for such services. This additional position will allow the development of critical data base systems to support all transportation modes.

ADMINISTRATIVE LAW JUDGES

Mr. CARR. How would the additional three FTEs proposed for the office of administrative law judges in the OMB submission be used and why are they justified?

[The information follows:]

The additional three positions for the Office of Administrative Law Judges as proposed in the OMB submission are needed to continue our efforts to reduce the serious delay in resolving FAA enforcement actions.

Since 1984, as the FAA has devoted more attention and resources to enforcement of the Federal Aviation Regulations, both appealable certificate and license enforcement actions taken by the FAA, and appeals of those actions to the Safety Board have doubled. In a policy which appears to have been initiated in January 1990, the FAA also has increased significantly its emergency revocation actions. The result has been a 93 percent increase in emergency appeals filed with the Board. Final disposition of emergency appeals must take place within 60 days from the filing of the FAA's complaint. With this significant increase in emergency appeal cases, the Board has been forced to use one judge position to handle only emergency appeals.

The increase in emergency appeals has caused a significant backlog of pending non-emergency appeal actions at the Board. For FY 1993, the Board has been able to temporarily realign its positions in order to meet this critical need on a part-time basis. However, an additional law judge position is necessary.

In addition, the transfer of jurisdiction to NTSB of the adjudicatory functions in civil penalty cases involving pilots and flight engineers requires additional personnel in the Office of Administrative Law Judges—one judge and one support position.

DISPOSITION OF APPEALS

Mr. CARR. Please provide for the record tables similar to those on pages 217 and 218 of last year's hearing record showing the disposition of appeals cases.

[The information follows:]

DISPOSITION OF CASES APPEALED TO THE FULL BOARD

[Ruling on judge's decision]

Cases	1986	1987	1988	1989	1990	1991	1992	1993
Appealed	232	203	176	251	197	214	186	84
Affirmed	72	87	42	50	62	57	109	50
Dismissed	43	70	47	94	85	80	61	22
Modified	20	17	20	15	13	23	26	9
Remanded	5	3	2	2	7	8	5	2
Reversed	32	6	11	11	7	8	32	16

¹ October 1, 1992 through February 28, 1993 (Actual).

DISPOSITION OF THE FEDERAL AVIATION ADMINISTRATION'S ORDERS BY THE SAFETY BOARD ADMINISTRATIVE JUDGES

Fiscal year	Affirmed	Modified	Reversed
1986	97	51	15
1987	45	31	32

DISPOSITION OF THE FEDERAL AVIATION ADMINISTRATION'S ORDERS BY THE SAFETY BOARD
ADMINISTRATIVE JUDGES—Continued

Fiscal year	Affirmed	Modified	Reversed
1988.....	145	99	36
1989.....	184	149	76
1990.....	184	131	54
1991.....	149	88	54
1992.....	157	67	36
1993 ¹	56	33	15

¹ October 1, 1992 through February 28, 1993 (Actual).

BOARD MEMBER TERMS

Mr. CARR. Would you review for us the status of each of the Board's seats, and whether you currently have any expired terms?
[The information follows:]

The terms of the five Board members follow:

Chairman Carl W. Vogt.....	Membership began June 22, 1992. Term as member expires December 31, 1996. Term as Chairman expires June 21, 1994.
Vice Chairman Susan M. Coughlin.....	Membership began February 11, 1990. Term as member expires December 31, 1993. Present term as Vice Chairman expires June 20, 1993.
John K Lauber	Membership began November 25, 1985. Second term as member expires as Member expires December 31, 1994.
Christopher A. Hart	Membership began August 6, 1990. Term as member expired December 31, 1992.
John A. Hammerschmidt	Membership began July 1, 1991. Term as Member expires December 31, 1995.

The Board has one expired term, the membership held by Christopher A. Hart.

CHAIRMAN'S TERM

Mr. CARR. Chairman Vogt, when were you designated Chairman of the Safety Board and when does your term as Chairman end?
[The information follows:]

Chairman Carl Vogt's two-year term as Chairman began June 26, 1992. The term expires on June 25, 1994.

TRANSIT SUBSIDY PROGRAM

Mr. CARR. Does the NTSB have a transit subsidy program for NTSB employees? If so, please indicate the level of the subsidy per employee and identify the amounts budgeted for the program in fiscal years 1993 and 1994.

[The information follows:]

The NTSB has implemented a subsidy program at the level of twenty dollars per participant per month. The amount budgeted for this program in fiscal years 1993 and 1994 are \$35,244, and \$36,275, respectively.

STAFFING REDUCTIONS

Mr. CARR. The President's February Executive Order mandates that all executive branch agencies with over 100 employees reduce staffing by 4 percent by 1995, beginning in this fiscal year. Independent regulatory commissions and agencies are requested to comply with the Executive Order. What instructions did you receive from OMB regarding personnel reductions required of the NTSB under the Executive Order?

[The information follows:]

The President's February Executive Order mandating reductions in staff by 4 percent by fiscal year 1995, will require the Board to reduce its staff from the current 357 FTE level to 343 by 1995.

ON-BOARD EMPLOYEES

Mr. CARR. Please provide for the record a table that details your current on-board employment by major organizational unit within the NTSB.

[The information follows:]

Organization	On-board
Policy and direction	43
Aviation safety	130
Surface transportation safety	95
Research and engineering	51
Administration	32
Administrative law judges	11
Total	362

REDUCTION-IN-FORCE

Mr. CARR. Will it be necessary to have a reduction in force in order to achieve the proposed fiscal year 1994 staffing level?

[The information follows:]

No, we do not believe it will be necessary to have a reduction-in-force to achieve the proposed fiscal year 1994 staffing level. We plan to reach this reduced level through attrition.

STAFFING LEVELS PROPOSED TO OMB

Mr. CARR. Please provide for the record a table that displays the additional positions requested in the Board's OMB submission by type of position and office within NTSB.

[The information follows:]

Positions requested	Number requested
Aviation Technical and Investigative Positions	10
Surface Technical and Investigative Positions	9
Haz Mat Investigative Position	1
Aviation Appeals	5
General Litigation Attorney	1
Computer Programmer Analyst	1
Total request	27

STAFFING LEVELS BY HEADQUARTERS AND FIELD

Mr. CARR. Please provide for the record a table that details fiscal year 1993 and proposed fiscal year 1994 staffing in headquarters and regional and field offices.

[The information follows:]

FISCAL YEAR 1993

Organization	Headquarters	Regions and field	Total
Policy & Direction	44		44
Aviation Safety	53	77	130
Surface Transportation Safety	59	34	93
Research & Engineering	48		48
Administration	29		29
Administrative Law Judges	13		13
Total	246	111	357

FISCAL YEAR 1994

Policy & Direction	43		43
Aviation Safety	50	77	127
Surface Transportation Safety	56	34	90
Research & Engineering	47		47
Administration	28		28
Administrative Law Judges	13		13
Total	237	111	348

SENIOR EXECUTIVE SERVICE BONUSES

Mr. CARR. Please provide for the record amounts budgeted for senior executive service bonuses in fiscal years 1993 and 1994.

[The information follows:]

The amounts budgeted for senior executive service bonuses are \$60,000 in fiscal year 1993 and \$60,000 in fiscal year 1994.

SENIOR EXECUTIVE SERVICE EMPLOYEES

Mr. CARR. Please provide for the record a listing of the senior executive service employees currently on-board and their grade levels.

[The information follows:]

Position	Grade level
Managing Director	ES-06
Deputy Managing Director	ES-06
General Counsel	ES-06
Deputy General Counsel	ES-02
Director, Office of Safety Recommendations	ES-05
Director, Office of Aviation Safety	ES-06
Deputy Director, Office of Aviation Safety	ES-05
Director, Office of Surface Transportation Safety	ES-05
Deputy Director, Office of Surface Transportation Safety	ES-01
Director, Office of Research & Engineering	ES-05
Director, Office of Administration	ES-05

AVIATION ACCIDENT REPORTS

Mr. CARR. For fiscal year 1993, your budget justifications indicate a 300 percent increase in the number of domestic aviation field and other accident investigations reports: 4,000 as compared with 1,176 reports in fiscal year 1992. How were you able to handle the huge increase in workload?

[The information follows:]

During last year's testimony we stated that we were in a transition period for a modification of our aviation data computer entry process and that as a result we

had a growing backlog in the issuance of our accident briefs and probable cause. The transition period has ended and we are in the process of eliminating the accumulated backlog. Although much of the work was accomplished during the second half of fiscal year 1992, the majority of these reports were not issued until fiscal year 1993.

PERSONNEL COMPENSATION

Mr. CARR. What assumptions were used to calculate the proposed \$158,000 reduction in personnel compensation requested for fiscal year 1994?

[The information follows:]

The proposed \$158,000 reduction in personnel compensation assumes a change in the current staffing mix of permanent versus temporary employees with a net reduction of 9 FTE. Our staffing mix at the 348 FTE level assumes a larger percentage of permanent, higher-graded full-performance level employees.

In the past, the Safety Board has used temporaries to fill the lapse created by permanent FTE attrition. This results in our permanent positions not exactly equating to permanent FTE. Although this permanent attrition amounts to very little on an individual basis, added together, several FTEs can be gained by hiring temporary employees. Temporaries have been used in the past because of their high quality, low cost, and ease of hiring/firing. In FY 1994, our high level of permanent employees on board (362), as well as the lower FTE ceiling (348) imposed by the President for FY 1994 will make it necessary for us to use any FTE savings to cover our current permanent staff. Therefore, our FY 1994 permanent FTE much more closely relates to the actual permanent positions that are detailed in the budget document.

Although the budget dollars reflects only a net reduction of \$158,000 (9 FTE) over the FY 1993 level resulting from this shift (\$343,000 in the cost of temporaries offset by an increase of \$185,000 in permanent employee costs), the real difference in dollars can be seen in the fact that it would cost the Board an additional \$825,000 to maintain the 357 FTE level in FY 1994 given the current mix of staff.

PAY INCREASES

Mr. CARR. What assumptions are included in the President's fiscal year 1994 proposal regarding pay increases?

[The information follows:]

The President's fiscal year 1994 proposal includes only the annualization of the January 1993 (3.7 percent) general pay raise.

PERSONNEL BENEFITS

Mr. CARR. You are requesting \$4.6 million for personnel benefits in fiscal year 1994. Why do you need a 10.2 increase for benefits next year?

[The information follows:]

Civilian benefits costs are expected to exceed projected increases related to any increases in pay rates. Higher health benefit premiums, the increase in the number of employees covered by the more expensive Federal Employees Retirement System, and the continued increase in employee participation in the Thrift Savings Plan, have been the primary reasons for similar civilian benefit increases experienced during the past few years.

ATTRITION RATE

Mr. CARR. Last year you indicated that your attrition rate in fiscal year 1991 was 12 percent. What is your rate of attrition in 1992?

[The information follows:]

The Safety Board's attrition rate in 1992 was 9 percent. We believe that this is a direct result of your support for our rebuilding efforts during the past two years. The progress we have been able to make in enhancing our staffing depth has al-

lowed us to require less overtime and comp time of our investigative staff, and also has made it possible for these employees to attend training to improve their technical skills and overall effectiveness.

OTHER SERVICES

Mr. CARR. Would you provide a breakdown of your \$2.117 million request for "other services" in fiscal year 1994?

[The information follows:]

Other services

[Thousands of dollars]

Object class description:	FY 1994 request
Accident investigation.....	146
Training tuition/fees.....	345
Working capital fund.....	11
Building security.....	229
Building and equipment maintenance.....	455
Court reporting.....	237
Miscellaneous.....	694
Total other services.....	2,117

INSURANCE CLAIMS AND INDEMNITIES

Mr. CARR. What accounts for the significant increase between fiscal year 1992 and fiscal year 1993 in funds allocated for "insurance claims and indemnities"?

[The information follows:]

The amount requested in fiscal year 1993 for insurance claims and indemnities reflects the direct dollar costs of compensation and medical benefits, as identified by the Department of Labor, paid under the Federal Employees' Compensation Act during the expense period of July 1, 1990 through June 30, 1991 for injuries or deaths sustained after December 1, 1960, by employees under jurisdiction of the NTSB.

SUPPLIES AND MATERIALS

Mr. CARR. You are requesting \$342,000 for supplies and materials. That amounts to approximately \$982 per staff year in fiscal year 1994,. Why are supply costs increasing when you are requesting fewer staff?

[The information follows:]

Supply costs are increasing due to inflation and the fact that some of the items included in this category, such as high cost subscriptions for technical publications, are not eliminated as staff is reduced.

COMMUNICATIONS AND UTILITIES

Mr. CARR. Please provide a breakdown of your "communications and utilities" budget by categories that include local telephone, long distance telephone, mail, copier rental, courier service, et cetera.

[The information follows:]

Communications and Utilities

[Dollars in thousands]

Object class category:	FY 1994 request
Local telephone.....	382
Long distance telephone.....	88
FTS.....	117

Mail	142
Copier rental	23
Accident investigation rentals.....	26
Total, Communications, Utilities, and Miscellaneous Charges	778

ACCIDENT REPORT TIMELINESS

Mr. CARR. Please update for the hearing record the tables summarizing the time frame required to issue your accident reports found on page 134 of last year's hearing record.

[The information follows:]

TIMELINESS OF ACCIDENT REPORTS
TIME BETWEEN OCCURRENCE AND THE ADOPTION OF REPORTS

Fiscal Year	FTE	AVIATION		RAILROAD		HIGHWAY		MARINE		HAZ MAT/PIPE		TOTAL	
		Rpts	Ave. Elapspd Time (MOS.)	Rpts	Ave. Elapspd Time (MOS.)	Rpts	Ave. Elapspd Time (MOS.)	Rpts	Ave. Elapspd Time (MOS.)	Rpts	Ave. Elapspd Time (MOS.)	Rpts	Ave. Elapspd Time (MOS.)
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
MAJORS:													
FY79	378	19	6.9	13	6.2	8	10.8	19	14.4	4	6.5	63	9.5
FY80	380	13	8.8	11	5.8	6	5.6	18	12.9	7	7.2	55	9.0
FY81	365	16	8.6	12	5.5	8	5.9	12	8.3	5	10.4	53	7.6
FY82	306	14	11.4	8	7.5	7	7.9	8	10.5	3	6.6	40	9.5
FY83	308	10	9.2	10	8.4	5	7.5	9	12.5	3	7.3	37	9.4
FY84	331	13	11.7	6	7.4	7	9.1	9	10.1	5	10.2	40	10.1
FY85	336	10	10.8	11	14.0	6	8.3	12	11.6	6	13.7	45	11.8
FY86	323	6	11.2	6	14.5	5	8.6	14	12.0	5	14.2	36	12.1
FY87	324	8	10.8	6	14.8	6	13.9	8	10.3	6	15.2	34	12.7
FY88	324	9	12.0	4	11.9	5	10.3	10	11.7	1	11.7	29	11.6
FY89	324	8	14.1	5	11.1	5	10.7	8	10.4	1	9.1	27	11.6
FY90	325	5	12.2	3	11.8	4	12.3	6	15.8	4	14.4	22	13.5
FY91	344	8	12.8	4	14.3	2	13.8	7	17.7	2	10.8	23	14.5
FY92	357	7	11.0	2	17.1	2	15.1	6	19.8	1	16.0	18	15.3
E93	357	7	11.0	2	17.1	2	15.1	6	19.8	1	16.0	18	15.3
E94	348	6	11.3	2	17.5	2	15.5	5	20.3	1	16.4	16	15.7

Average	339	10	9.9	7	9.4	5	9.3	10	12.2	3	10.9	35	10.5

ACCIDENT REPORT TIMELINESS

Mr. CARR. Last year, it was indicated that from fiscal year 1990 to fiscal year 1991, the average time to complete an accident report increased from 13.5 months to 14.5 months. What is your recent experience in this regard, and how will that be affected by your proposed staffing reductions for fiscal year 1994?

[The information follows:]

The fiscal year 1992 average time to complete an accident report was 15.3 months. We are hopeful that the proposed staffing reductions for fiscal year 1994 will result in only a small increase, to 15.7 months.

SAFETY RECOMMENDATIONS

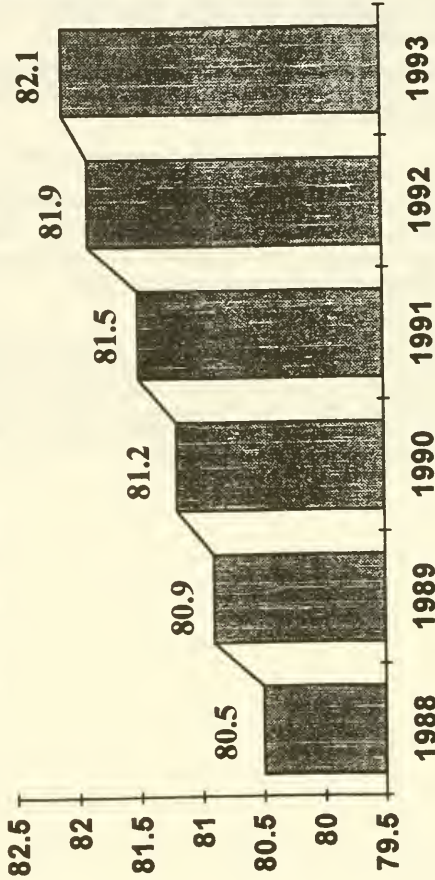
Mr. CARR. Your Office of Safety Recommendations is responsible for the accident recommendation follow-up. How successful have you been in increasing the number of recommendations closed or closed with acceptable alternative actions?

[The information follows:]

The Safety Board's safety recommendations are our most important product. Implementation of our recommendations improves safety in all modes of transportation. The Safety Board has been extremely successful in increasing acceptance of our safety recommendations. The chart below shows that the recommendation acceptance rate has increased every year from 1988 through 1993. We will continue to work to make the acceptance rate even higher.



Safety Recommendations Acceptance Rates



Current Acceptance Rate = 82.1%

SAFETY RECOMMENDATIONS CLOSED

Mr. CARR. Please update the chart concerning closeouts on page 170 of last year's hearing record.

[The information follows:]

The table below is an update of the table referred to. Please note that some of the numbers for previous years have changed slightly. This is due to quality control procedures that found some mistakes in the data entered for those years.

Year	Closed	Closed— acceptable or alternate	Percent
1986.....	482	331	69
1987.....	624	409	66
1988.....	475	281	59
1989.....	365	240	66
1990.....	375	281	75
1991.....	298	212	71
1992.....	346	212	61

It should be noted that the percent shown here is not the Board's measure "Acceptance Rate." The Acceptance Rate figure is a cumulative percentage for all recommendations issued since 1967 and removes such status assignments as "Open—Await Response," "Open—Response Received," "Closed—No Longer Applicable," and "Closed—Reconsidered" from the equation. The acceptable rate also includes the recommendations still open—both acceptable and unacceptable.

The current "Acceptance Rate" for all of the Board's Safety Recommendations is 82.1 percent.

NTSB REAUTHORIZATION

Mr. CARR. Your authorizing statute, the Independent Safety Board Act of 1974, expires at the end of fiscal year 1993. What portion, if any, of your fiscal year 1994 budget request is currently authorized?

[The information follows:]

None of the fiscal year 1994 budget request is currently authorized.

Mr. CARR. Have you submitted a legislative proposal to reauthorize the NTSB?

[The information follows:]

Yes. The Safety Board submitted its reauthorization legislative proposal on April 23, 1993. A copy is below for your information.

**National Transportation Safety Board**

Washington, D.C. 20594

Office of the Chairman

April 23, 1993

Honorable Thomas S. Foley
Speaker of the House of Representatives
Washington, D. C. 20515

Dear Mr. Speaker:

Enclosed is a legislative proposal to amend the Independent Safety Board Act of 1974 to provide authorization for the National Transportation Safety Board. This authorization will allow appropriations for fiscal years 1994, 1995, and 1996.

This proposal provides no new program initiatives, although dollar increases are included to cover the effects of inflation and other uncontrollable cost increases.

Sincerely,

A handwritten signature in dark ink, appearing to read "C. W. Vogt".

Carl W. Vogt
Chairman

Enclosure

A BILL

To amend the Independent Safety Board Act of 1974 to authorize appropriations for fiscal years 1994, 1995, and 1996, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that this Act may be cited as the "Independent Safety Board Act Amendments of 1993."

SEC. 1. Section 309 of the Independent Safety Board Act of 1974 (49 U.S.C. 1907) is amended by adding at the end thereof the following new sentence:

[There are authorized to be appropriated for the purposes of this Act not to exceed \$37,125,000 for the fiscal year ending September 30, 1994; \$44,000,000 for the fiscal year ending September 30, 1995; and \$45,100,000 for the fiscal year ending September 30, 1996."]

STATEMENT OF JUSTIFICATION

AMENDMENTS TO THE INDEPENDENT SAFETY BOARD ACT OF 1974

Section 309. This proposed amendment provides the authority to appropriate funds for the National Transportation Safety Board for fiscal years 1994, 1995 and 1996.

The requested authorization levels are \$37.125 million and 348 FTEs (full time equivalent) for fiscal year 1994, \$44 million and 384 FTEs for fiscal year 1995, and \$45.1 million and 384 FTEs for fiscal year 1996. The requested authorization for fiscal year 1994 is consistent with the Safety Board's 1994 Congressional submission. The staffing level requested for fiscal years 1995 and 1996 includes three FTE positions more than our current authorized staffing level of 381. These positions are required to perform the adjudicatory functions in civil penalty cases involving pilots and flight engineers. This program was transferred to the Board from the FAA in September 1992.

In addition to an increase in staff for fiscal years 1995 and 1996, the requested authorization also includes funds to cover increased costs related to pay raises, civilian benefits (primarily FERS and health benefits), inflation, and promotions and within-grade increases. The request for fiscal year 1995 also includes increases for a permanent change of station guarantee home buy program, ADP equipment, training, and laboratory/investigative equipment, items that are essential to the Safety Board retaining and attracting the highest caliber employees and achieving the most efficient and effective use of its resources. This request does not include funding for locality pay increases that may be implemented during the period covered by this authorization request.

NTSB REAUTHORIZATION

Mr. CARR. Do you have any plans to make significant changes in your authorizing statute?

[The information follows:]

No. The Board did not request changes in its authorizing statute.

CLOSING REMARKS

Mr. CARR. You have been most generous with your time. I think we have the substance of what we want for the budget justifications.

Mr. Wolf, do you have any other questions?

Mr. WOLF. I have a few questions for the record.

Mr. CARR. Okay.

STAFFING LEVELS PROPOSED

Mr. WOLF. Your budget request of 348 FTE's is 36 less FTE positions than you requested of OMB and nine less than current staffing levels. Yet in your testimony, you promise continued round-the-clock readiness to investigate transportation accidents. It would seem that something would have to give. What areas will absorb these staffing cutbacks?

[The information follows:]

All areas will share the staffing cutbacks. However, since we are committed to achieving this reduced level through attrition, we cannot be sure which positions will become vacant over the next several months. In fact, it likely will take us a period of years to achieve the optimum mix of positions at that reduced level.

Even though we will continue to respond promptly to investigate major accidents, our anticipated lack of staffing depth at critical positions will limit our ability to respond to incidents (close calls) and to participate in foreign investigations of accidents involving U.S.-manufactured parts; will delay issuance of reports, and will limit our ability to followup on safety recommendations and to keep abreast of changing technologies. Our technical/investigative staff will be forced to spend most of its time gathering the factual information related to an accident and developing safety recommendations to address issues that arose during the fact-finding phase of the investigation, at the expense of producing the analysis of those facts. Effectively, it will negate much of the progress we have made in recent years with the support of both OMB and the Congress to rebuild our staff to a level that will allow us to properly fulfill our vital role in Transportation Safety.

GO TEAMS

Mr. WOLF. What impact will these cutbacks have on the Board's ability to field the necessary "Go Teams" to investigate accidents?

[The information follows:]

The Safety Board is committed to launching a full complement of investigative and technical specialists to major accident sites. However, these cutbacks will cause delays in completing accident reports, and likely will result in an increase in our attrition rate, as investigators likely will be required to be "on call" much more often.

COMMUTER RAIL SAFETY

Mr. WOLF. Many urban commuter rail systems, such as northern Virginia's VRE, operate in a push-pull mode, with the locomotive able to either pull or push the train. Since most crashworthiness studies have focused on locomotives, this raises another grade crossing safety issue if an accident occurs while the locomotive is

pushing the train and therefore there is a cab or passenger car in the lead.

You are currently investigating such an accident with Metrolink which occurred last year in Los Angeles when the locomotive was being used to push the train. In that accident, extensive damage was done to the cab control car which was leading the train. What are the implications of this safety issue for urban commuter rail systems which operate in densely populated areas, some of which have numerous grade crossings?

[The information follows:]

NTSB is actively working on the issue of crashworthiness. The Los Angeles accident on Metrolink demonstrated that accidents in the push mode place new requirements on car integrity that affect passenger safety. The push-pull concept is not new to the rail industry. Chicago's METRA has operated push-pull in commuter service for years. New urban commuter systems, such as Virginia's VRE have adopted the concept. However, self propelled cars also place passenger cars at the leading end of the train's movement. On January 18, 1993, two Northern Indiana Commuter Transportation District (NICTD) trains collided killing 7 and injuring 103, both trains were self propelled equipment and crashworthiness has been identified as a major issue for investigation. Grade crossing accidents have long posed a hazard to passenger trains and with the increase in the number of push-pull operations, the crashworthiness of equipment is now a high priority issue of the Safety Board.

COMMUTER RAIL SAFETY

Mr. WOLF. Will the Board be issuing any recommendations for commuter rail systems which have push-pull train sets, especially in terms of extra precautions which must be taken when the train is in the push mode?

[The information follows:]

You can expect that the Safety Board will be considering recommendations addressing crashworthiness of all passenger equipment from investigations now underway.

CLOSING

Mr. CARR. Well, at this point then, you are excused.

Thank you for your cooperation.

Mr. VOGT. Thank you, and we appreciate it.

MONDAY, APRIL 26, 1993.

FEDERAL AVIATION ADMINISTRATION

WITNESSES

U.S. GENERAL ACCOUNTING OFFICE

KENNETH M. MEAD, DIRECTOR, TRANSPORTATION ISSUES, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE

ROBERT D. WURSTER, SENIOR EVALUATOR

ROBERT E. LEVIN, ASSISTANT DIRECTOR, AIRPORT/AIRWAYS MODERNIZATION AND MANAGEMENT

ALLEN LI, ASSOCIATE DIRECTOR

MARY ANN KRUSLUCKY, ASSISTANT DIRECTOR, FAA OPERATIONS

ROY JUDY, SENIOR EVALUATOR

FEDERAL AVIATION ADMINISTRATION

JOE DEL BALZO, ADMINISTRATOR (ACTING)

OPENING REMARKS

Mr. CARR. Good morning. The subcommittee will convene and will receive testimony on the fiscal year 1994 budget of the Federal Aviation Administration. The FAA performs a vital safety mission for the United States Government and all of the citizens and the traveling public of our country and our foreign visitors, by controlling air traffic, inspecting aircraft maintenance practices, certificating new aircraft and performing many other critical safety functions.

It is the responsibility of this Subcommittee to ensure that the FAA's important programs are adequately funded each year and that the agency is properly managing its resources.

The FAA's budget request for the next fiscal year is a lean one. The President's proposal would result in increases of less than 1 percent for FAA operations and less than 3 percent for facilities and equipment. That doesn't include the President's proposed investment package.

In past years, requested increases of 5 to 8 percent for operations and 30 percent for capital programs were not uncommon. So the proposed budget is very tight, undoubtedly the tightest in recent FAA history. This has led to some controversial proposals, such as the elimination of the pay demonstration project for air traffic controllers. We will investigate some of these areas this morning.

We will also discuss the potentially dramatic effects on the FAA budget if this Committee were forced to fully fund the surface transportation legislation known as ISTEA, if we do that within the confines of the 1994 budget resolution. The administration would like us to fully fund ISTEA next year.

However, the President's budget, with the investment package included, is well above the amount assumed for transportation in the congressional budget resolution, which the President also supported. If we were to fully fund the surface transportation pro-

gram, I am afraid the FAA would have to pay a very large share of that bill, and the effect would be very, very serious on air traffic control and operations and maintenance of the agency and potentially impact safety.

This Committee has always met its responsibility to provide for a balanced transportation system for the country, and I am not sure we could do that if we fully funded ISTEAD within the overall budget targets that we were given.

We will also be exploring the FAA's airport grants program and the effects the program has on airport financing and on our airline industry.

I assume the concerns that some people have are well placed. I have concerns that some of the PFCs, the passenger facility charges, are not being used for enhancing the safety or capacity of our airway system, but are used rather to enhance the "field of dreams" visions of some local officials. These are not really passenger facility charges. What they really are is airline facility charges because currently no passengers in our current economy are paying for them. The airlines that are losing a great deal of money are eating all of these charges. The airlines lost about \$10 billion over the last three years and I don't think they can afford to have additional taxes imposed on them if they don't contribute to lowering their business costs or increasing the safety of their airports.

I am also concerned that the FAA does not award its grants programs based on performance-based criteria, and we are going to talk more about that later on in the hearing.

INTRODUCTION OF GAO

Before we turn to the FAA, however, I would like to, once again, introduce to the committee Mr. Ken Mead, Director of Transportation Issues for the U.S. General Accounting Office, and then we will hear testimony by Mr. Del Balzo, the FAA acting administrator later.

Mr. Mead, you have logged a lot of hours before this Committee in the last couple of weeks. As I said in an earlier hearing, we appreciate the time and attention you give to the concerns of the Committee. We understand and appreciate the amount of work it takes to put good testimony together and to do it so many days in a row in a compressed time frame has taxed you and your entire staff, but we are convinced that it is helpful to the deliberations of this Committee and ultimately helpful to the taxpayers of the country for whom we all work.

Your entire written statement will be made a part of the record, as is the custom, and we will ask you to summarize the high points of your testimony. I would like you also to introduce the panel of people from GAO with you, themselves all good friends of this Committee. We appreciate your being here this morning.

STATEMENT OF KENNETH MEAD

Mr. MEAD. Thank you, Mr. Chairman. And thank you for the kind remarks. It is a very good committee to work with, both from the standpoint of the members and the staff. I would like to introduce my colleagues. On my far left is Bob Wurster. He has a lot to

do with the work that we deliver to the Congress in the modernization program. Bob Levin, one of our assistant directors for Airport/Airways Modernization and Management. Mr. Li on my immediate left, is my new associate director. Mary Ann Kruslicky, she is our Assistant Director for FAA Operations, and Roy Judy on her right. He is the principal author of our testimony this year.

Mr. Chairman, I will summarize the statement and ask that it be put in the record. The 1994 FAA budget request is about \$9.2 billion. It is a 3.5 percent increase over last year. I would like to speak briefly to four main areas, air traffic control modernization, the work forces, that is, the controllers, the inspectors, the maintenance technicians, the airport grant program, and the status of security research and development.

ATC MODERNIZATION

First, ATC modernization. FAA is asking for about \$2.5 billion for fiscal 1994. We issued an annual status report on the modernization effort last week. I would like to overview some of the vital statistics from that report.

Congress has already appropriated about 45 percent of the roughly \$33 billion that modernization will cost through the year 2000. Taken as a whole, costs for the 12 major acquisitions that we track each year for the subcommittee have risen about 55 percent since their inception. That goes back for many of these projects roughly a decade. Schedule slips have averaged about five years.

At the end of 1991, FAA had completed 36 of the roughly 230 modernization projects. By end of 1992, 46 were completed. They represent about 5 percent of the cost of modernization to put that in perspective. In terms of schedule performance for 1992, four of the twelve major projects experienced slippages, but that is better than in 1991 when seven of the twelve were delayed and better than in 1990 when eight of the twelve were delayed.

In terms of cost increases, it is up by about \$870 million over last year. About \$230 million of that occurred in growth for the Big 12. In the past, most of the growth in total modernization costs came from the 12 major projects. This year you are seeing something different. Most of the increases are due to the inclusion in the capital investment plan of 12 new projects.

As this record shows, Mr. Chairman, there is a long history of cost growth and schedule delays, and this has caused some erosion in the aviation community's confidence in FAA's implementation of the modernization program. This year, though, and early next, will be a watershed period for FAA, a time of enormous opportunity to put the program solidly on track and begin to bring the bacon home.

This is true not only for the major 12 projects, but for the new projects being proposed as well. Some examples of what I mean by this; in addition to coming to grips with the advanced automation system, which is a subject we discussed exhaustively last week, FAA must follow through on the currently scheduled 1993 fielding of several key systems, like modus radar, the terminal Doppler weather radar for wind sheer detection and the airport surface detection radar.

Another example, after putting off a decision for years, FAA last week decided on a new facility consolidation plan. FAA now plans to have about 200 facilities. That is considerably more than the 23 that were formerly proposed. The budgetary and operational impacts of this decision are profound and they will be far-reaching.

In the months ahead, FAA can be of enormous service to the aviation community and to Congress by assessing the implications fully and credibly and telling the Congress what those implications are.

Also I should note that FAA has taken some very positive steps to improve its acquisition management. FAA is now requiring mission needs statements to justify new projects and has improved its oversight of operational testing. There are major targets of opportunity for further improvements in this area, though, such as making sure mission needs statements are not just paper exercises, and, in fact, establish the need for new projects.

We reviewed 25 approved mission needs statements for new projects with an estimated price tag of \$5 billion. Many of them, over half, simply asserted a need for a system and did not contain any qualitative or quantitative support.

Though FAA's acquisition reforms will have their greatest impact on the new projects, there also are clear opportunities for applying them to some of the old. One example, they should determine on a runway-by-runway basis which category of precision landing systems is most justified before going out to buy microwave landing systems. This could save the industry a great deal of money.

Another thing FAA can do which will help guide your funding decisions is to incorporate goals into the modernization program. Usually we come up here, FAA comes up here, we talk about schedule slippages, cost increases. They sometimes point out that they had signed so many contracts this year and those aren't the best indicators. They are indicators but not the best indicators, and we think going to goals, performance measures, is something that FAA could consider, and we understand that in the 1992 capital investment plan, when it is published, will contain such goals.

FAA WORK FORCES

Turning to work forces. FAA spent much of the 1980s ensuring that it had enough air traffic controllers and safety inspectors. Today in our view the primary challenge is no longer one of overcoming shortages but rather one of effectively distributing the controller work force among key facilities and targeting its inspector resources to those areas of highest risk.

As for controllers, there is an imbalance in a number of controllers assigned to terminals and center facilities. According to FAA's standards, for example, it is about 1,000 short at certain terminals, and 800 too many at other terminals. This is not a new issue.

This subcommittee directed FAA to deliver a facility-by-facility staffing analysis by December 1991. FAA has not done so, primarily because it is not comfortable with its standards. Until the standards give you a reasonable approximation of how many people you need, we are not going to be well positioned to decide what to do.

Also I might note, Mr. Chairman, that in the staffing area, FAA can probably use some help from the subcommittee this year, particularly in the area of contracting out towers.

Inspectors. FAA's inspector work force has a wide range of responsibilities. Because of the large work load, FAA disperses the resources over a lot of high priority areas. We can't just tell the inspectors to emphasize these priority areas because there are so many priorities.

Our recent reports identifying inadequate inspection coverage of foreign carriers and aging aircraft further illustrate that need. FAA is developing an automated system to help it more effectively and efficiently use inspectors. FAA will need congressional funding support this year to move forward on that important initiative.

Maintenance technicians. We have concerns here about the validity of FAA's maintenance technician staffing standards because the agency is consistently maintaining a very high level of system availability, 99.8 percent, with a work force that is about 30 percent below what its standards say they need.

FAA is using contractors and overtime to help bridge the gap between the estimated maintenance staffing needs, but the standards say they are still about 3,000 short. We don't know exactly what FAA's plans for staffing this work force will be in the future, but it is clear that the current maintenance standards will be of limited use to you in making informed decisions.

AIP PROGRAM

Moving to the airport improvement program. FAA could leverage the about \$2 billion airport improvement budget by developing national goals and criteria to guide project funding decisions. We have seen FAA's limitation in the strategic planning and analysis area now in several cases, in Denver, Chicago, Detroit City, and Front Range.

A great deal of money is involved and it is time for FAA to set some goals and develop a system to measure performance against them and make funding decisions accordingly.

RESEARCH AND DEVELOPMENT

And finally, in the research and development area, we are conducting work for you about how, among other things, FAA is progressing in meeting the Congress' desire to have new detection devices in place by November 1993. The budget is for \$36 million, the same as last year, but considering the issues that have surfaced, the November date is, in our view, extremely optimistic and we do not see how it can reasonably be met. These issues include: Technical problems with some of the new devices, questions about who is going to pay to field the new devices, and how much and what the testing protocols for these devices should be at airports.

All those matters are going to have to be resolved before you can field these new security devices. And we will be glad to respond to any questions you may have.

Mr. CARR. Thank you very much, Mr. Mead.

[The prepared statement of Kenneth Mead follows:]

United States General Accounting Office

GAO

Testimony

Before the Subcommittee on Transportation and
Related Agencies, Committee on Appropriations,
House of Representatives

For release on Delivery
Expected at
9:00 a.m. EDT
April 26, 1993

FAA BUDGET

Important Challenges Affecting Aviation Safety, Capacity, and Efficiency

Statement of Kenneth M. Mead,
Director, Transportation Issues,
Resources, Community, and Economic
Development Division



Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to testify on the status of the Federal Aviation Administration's (FAA) programs and activities that provide the framework for its fiscal year 1994 budget request. At \$9.2 billion, FAA's budget request represents a 3.5 percent increase over the fiscal year 1993 appropriation. This includes \$2.5 billion for facilities and equipment (F&E); \$4.6 billion for operations; \$1.8 billion for grants-in-aid to airports; and \$250 million for research, engineering, and development (RE&D). In all of these areas, FAA faces important challenges that affect the safety, capacity, and efficiency of the aviation system. One such challenge, as discussed during our March 10, 1993, testimony before this Subcommittee, is how FAA can help improve the U.S. airline industry's financial condition.¹

Our testimony today identifies additional challenges and focuses on the status of FAA's air traffic control modernization program, work forces, airport development, and aviation security initiatives. The information we present here is based on reports that we have issued in the past year and other information that FAA provided to update the status of certain programs. A list of our relevant reports and testimonies appears in appendix I. In summary, we found that:

- The aviation community's confidence in FAA's ability to manage the air traffic control modernization program has been weakened by a history of cost increases and schedule delays. FAA has the opportunity in the next year to help put the program on track. First, FAA must follow through and field some systems, such as Mode Select and the Airport

¹State of the Airline Industry: Strategies for Addressing Financial and Competition Problems (GAO/T-RCED-93-21, Mar. 10, 1993).

Surface Detection Equipment radar. Second, FAA must resolve the budgetary impact of its recently announced facility consolidation plan. The new plan--which calls for an estimated \$2.5 billion in additional F&E costs through the year 2004--will require FAA to request more funds or to decrease funding for projects that are unrelated to the consolidation plan. Finally, FAA needs to strengthen its acquisition management. For example, in reviewing the earliest phase of 25 new acquisitions costing an estimated \$5 billion, we found that many mission need statements did not justify the need for capital investments. Acquisition reforms may also have an important impact on older projects--such as those involving precision landing systems. The actions FAA takes will do a great deal to enhance or diminish its credibility in managing the modernization program.

- FAA spent much of the 1980s ensuring that it had a sufficient number of air traffic controllers and safety inspectors to fulfill all its responsibilities. Today, the primary challenge is not one of overcoming staffing shortages but rather one of effectively distributing its controller work force among key facilities and targeting its inspector resources to those areas needing the most attention. FAA is moving forward to develop a system for better targeting inspection resources to areas needing the most attention.
- We have concerns about the validity of FAA's field maintenance technician staffing standards because the agency has consistently maintained a high level of system availability with a work force well below the standards. FAA has used contractors and overtime to help bridge the gap between estimated maintenance staffing needs (12,700) and availability (8,900). With an increase in the number

of new systems planned over the next few years, FAA is evaluating various options to better utilize the existing maintenance work force.

- FAA could leverage the about \$2 billion Airport Improvement Program budget by developing national goals to guide project funding decisions and measuring how projects meet these goals. This process would enhance FAA's ability to evaluate projects like the proposed new Chicago-area airport and help allocate limited airport improvement funds effectively among projects. FAA is now working on setting goals and developing a system to measure performance against goals, but it has not established a time frame for completion.
- The Congress directed FAA to accelerate its research efforts to help prevent a recurrence of the Pan Am Flight 103 tragedy. Last year this Subcommittee directed FAA to analyze the trade-offs between aircraft survivability and explosive detection. FAA expects to complete its analysis in 1995. In addition, our ongoing work has identified several issues--such as technical problems with new devices and industry concerns about the cost of new devices--that need to be resolved before FAA can meet the high expectations of the Congress and the traveling public.

FACILITIES AND EQUIPMENT ACCOUNT

The F&E appropriation account funds the Capital Investment Plan (CIP), FAA's program to modernize the nation's air traffic control system. For fiscal year (FY) 1994, FAA has requested an F&E appropriation of \$2.5 billion, a 7-percent increase over the FY 1993 F&E appropriation.

CIP Projects Have Experienced Schedule Delays, But FAA Promises to Field Some New Systems Within the Next Year

FAA completed 10 CIP projects this past year. For example, FAA completed a communications project called NADIN II and a project to modernize automated systems in terminal air traffic control facilities.

Schedules for several major CIP projects were delayed. Our recent report on the CIP status found that 4 of the 12 major projects we follow each year had delays in the yearly implementation milestones published in the CIP.² For example, the first implementation milestone for the Airport Surface Detection Equipment (ASDE-3) radar--a system which could prevent runway incursions--was delayed 1 year because of continuing software problems. The 1991 CIP had projected that ASDE-3 would be operational in 1992, but as of early April 1993, none was yet operational. ASDE-3 is now 6 years behind its original schedule. Another example is that the first implementation date for FAA's new long range radar--the Air Route Surveillance Radar (ARSR-4)--was delayed from October 1993 to January 1994 because testing has taken longer than originally anticipated.

Other projects among the 12 we tracked also experienced delays in their initial segments. For example, as we testified to your Subcommittee last week, a key initial segment of the Advanced Automation System (AAS) has recently been delayed 14 months.³ As a result, this segment is about 3 years behind 1988 contract milestones. In another example, the initial version of the Mode Select (Mode S) radar has also experienced delays. At this time

²Air Traffic Control: Status of FAA's Modernization Program (GAO/RCED-93-121FS, Apr. 16, 1993).

³Air Traffic Control: Uncertainties and Challenges Face FAA's Advanced Automation System (GAO/T-RCED-93-30), Apr. 19, 1993.

last year, FAA expected the first Mode S system to be operational in July 1992; now the milestone has slipped 10 months, to May 1993.

Because modernization projects have encountered serious schedule delays over the years, FAA's ability to manage the modernization program has been called into question. This coming year is vitally important to FAA's credibility, because FAA has promised that several key systems--including Terminal Doppler Weather Radar, ASDE-3, ARSR-4, and Mode S--will be operational in the field.

CIP Costs Have Grown, and a Decision on Facility Consolidation Will Have Major Budgetary Implications

Overall CIP costs grew this past year. FAA's latest estimate of modernization costs through the year 2000 is \$32.8 billion, or an increase of \$869 million over the \$31.9 billion we reported in April 1992. A significant portion of this increase is due to the inclusion of 12 new projects in the CIP. Cost increases on key existing CIP projects also occurred. We found that 9 of 12 projects we follow had cost increases, ranging from \$1.7 million to \$77.1 million. In addition, 7 of the 12 have cost increases pending approval within the agency. For example, the ASDE-3 radar has \$30 million in pending changes to fix a persistent target-splitting problem, make needed site configuration changes, and pay the contractor for hardware and software changes it has already made.

FAA recently announced a major change to its air traffic control facility consolidation plan, which will increase CIP costs. FAA's original plan, developed in 1983, was designed to consolidate over 230 terminal radar approach control facilities and air route traffic control centers into just 23 facilities. Current CIP project costs are based on that level of consolidation. Because this consolidation plan has important limitations, including

operational feasibility problems, FAA has considered alternative plans since 1987. Last week, FAA announced its decision to proceed with a "limited consolidation plan" that would include 22 centers, 9 consolidated terminals, and about 170 unconsolidated terminals--in total about 200 facilities. Also last week, the Acting FAA Administrator promised to deliver the consolidation plan to the Congress within 30 days. At your request, we are reviewing FAA's consolidation effort.

Retaining a large number of facilities under the limited consolidation plan will increase F&E costs, because the plan will require additional building refurbishment and equipment purchases. For example, total costs for the Voice Switching and Control System (VSCS) will increase over \$100 million if FAA exercises contract options for additional systems for terminals. In total, FAA estimates that, through the year 2004, the plan will increase total F&E costs by almost \$2.5 billion. Because FAA has not yet released its consolidation plan and the analyses supporting it, we cannot assess its complete impact on costs. However, it is clear that the limited consolidation plan will have far-reaching budgetary implications. To accommodate the costs added by the limited consolidation plan, FAA will need to either increase its annual F&E appropriations requests or to reduce the money requested for non-consolidation-related CIP projects.

Acquisition Management Needs to Be Strengthened

Continued cost growth and schedule delays are, to a large extent, a reflection of decisions made many years ago. Most of the projects whose progress we report on were begun in the early 1980s. Improvements in FAA's acquisition management can help to minimize problems with existing projects and also help prevent cost and schedule problems with newer projects. These newer projects will consume an increasing portion of the F&E budget.

FAA can further strengthen its acquisition management by developing well-supported mission need statements, assessing alternatives for key projects such as those involving precision landing systems, and developing performance measures to quantify progress toward CIP goals.

Developing Well-Supported Mission Need Statements

Over the past few years, FAA and OST have taken steps to bring their acquisition management into compliance with federal acquisition policy. These steps included a commitment to follow a more disciplined approach to acquisition. For example, FAA requires mission need statements for all new projects in the CIP and F&E budget.

At the request of this Subcommittee, we recently reported on this vital first step in FAA's acquisition process.⁴ We found that many of FAA's mission need statements for new Capital Investment Plan projects do not justify that a need exists for the projects. The 25 approved mission need statements we examined listed 110 deficiencies in the air traffic control system, deficiencies that could cost \$5 billion in new investments to fix. However, many of these statements were not supported with either qualitative or quantitative evidence. The statements merely indicated that deficiencies had adverse effects on FAA's operations. Also, the statements did not contain evidence describing what performance problem was to be fixed, such as the extent to which a new investment could be expected to reduce delays or maintenance costs. Moreover, the statements were seldom based on analyses of performance, which would have measured how well current systems are

⁴Air Traffic Control: Justifications for Capital Investments Need Strengthening (GAO/RCED-93-55, Jan. 14, 1993).

performing, identified areas most in need of improvement, and helped to set priorities for capital investments.

Such system performance analyses should be the beginning point of the acquisition process. Yet, FAA's acquisition order and other guidance for mission need statements do not require an analysis of current performance as the starting point. FAA has made progress in improving its mission need statement process by setting up a team that performs mission analysis. However, FAA's new guidance depicts the team's conducting mission analysis after the submission of the mission need statement. The mission analysis process should begin earlier.

To avoid a repetition of past problems and to make significant improvements in its process for developing mission need statements for new projects, FAA must change its acquisition paradigm. Rather than continuing to focus on which system to purchase, FAA officials will have to reorient their thinking toward first analyzing current performance to identify and demonstrate deficiencies and a need for improved capabilities. Only then should FAA begin developing mission need statements. Until FAA takes this step, we are concerned that it may be asking the Congress to invest in new systems to solve problems that it has not thoroughly defined and analyzed.

Reassessing Needs and Identifying
Alternatives For Existing Projects

New acquisition policies recently issued by OST and FAA highlight the need to consider affordability of acquisition projects and to look for opportunities to acquire "off-the-shelf" technologies to help control costs and accelerate the delivery of new systems to the field.

The intent of the new policies is to help FAA identify and assess cost-effective alternatives. The identification and assessment of alternatives was the subject of one of our recent reports. Specifically, we see an opportunity for FAA to revalidate its needs and assess alternatives for the Microwave Landing System (MLS), which at \$2.6 billion is the second most costly CIP project. Last year, at your request, we reviewed FAA's plans to develop alternative precision landing systems, including the existing Instrument Landing System (ILS) enhanced with an aircraft-based computer system, and two emerging and potentially more capable technologies--the MLS and a satellite-based landing system. As we reported in November 1992, we found that FAA had not determined, on a runway by runway basis, which category of system would be needed and whether the replacement of each ILS with a higher capability system was actually justified.⁵ We recommended that FAA provide full budgetary support for the development of all alternatives and prepare a new mission need statement for precision landing systems in general.⁶ We emphasized that this statement should be ready before FAA decides on replacing existing ILSs.

FAA's Satellite Program Office conducted several flight tests using the Department of Defense's Global Positioning System (GPS) during 1992. In 1995, FAA will begin augmenting GPS to support special Category I precision approaches and will complete its evaluation of the feasibility of using an augmented GPS for Category II and III precision approaches. At the same time that FAA will complete its feasibility study, the agency will also be receiving 12 prototype Category II and III MLSS. We recommended

⁵Precision landing systems are categorized by different minimum standards of height and visibility. Category I equipment allows aircraft to descend to a height of 200 feet above the ground when the runway visual range is at least 1,800 feet. Category II and III equipment allow aircraft to descend closer to the runways.

⁶Airspace System: Emerging Technologies May Offer Alternatives to the Instrument Landing System (GAO/RCED-93-33, Nov. 13, 1992).

full budgetary support for the development of MLS and a satellite-based system to put FAA in the best position to compare the capabilities, costs, and benefits of those systems before the MLS full-production decision scheduled for 1996.

If proven feasible, the use of a GPS-based system could have a major impact on the costs to the airline industry. Some airlines are already installing GPS avionics to support aircraft operations during other phases of flight. Cost estimates are not yet available for GPS avionics upgraded for precision landing capability. However, using GPS for precision landings may allow airlines to forgo some of the substantial costs of equipping their aircraft with MLS avionics--which are estimated to range from \$252 million to \$336 million for the commercial aviation fleet. The potential costs to both FAA and aviation users make it essential that FAA thoroughly assess its needs and alternatives for precision landing systems, as we have recommended.

Establishing Goals From Which Progress Can Be Measured

Last year, we recommended that FAA incorporate measurable goals in the CIP to help guide funding decisions. FAA has not yet published the 1992 CIP. However, our review of a draft indicates that FAA will incorporate measurable goals. For example, one goal is to increase airport and airspace capacity by 20 percent by 1999. Another is to reduce runway incursions by 80 percent by 2000.

Now that FAA is taking this important step, it would be helpful for decision makers in both the executive branch and the Congress if FAA reported its progress against these goals. Up until now, FAA has reported its progress in terms of the number of CIP projects under contract and completed. Those are not true indicators of progress because they do not show how FAA is improving the safety and efficiency of the air traffic control

system, which is the overall goal laid out for the CIP and the F&E budget.

FAA has recently indicated that it is developing performance measures to track progress against these new CIP goals. Measuring progress against goals would help the Congress in making decisions on where to focus F&E resources. Additionally, FAA would be in a better position to analyze its performance and detect deficiencies in existing systems. This would result in improved mission need statements and better support for its F&E projects.

OPERATIONS ACCOUNT

FAA's requested appropriations of \$4.6 billion for operations represents less than a 1-percent increase (\$38 million) over its fiscal year 1993 appropriation. The operations account funds the salaries, benefits, and training of FAA's major work forces--air traffic controllers, safety inspectors, and maintenance technicians. FAA spent much of the 1980s ensuring that it had sufficient numbers of controllers, inspectors, and maintenance technicians. Today, the primary challenge is not one of overcoming staffing shortages but rather one of effectively distributing controllers and technicians among key facilities and targeting its inspector resources to those areas needing the most attention.

Strategy Needed to Overcome ATC

Facility Staffing Imbalances

Currently, the overall size of the controller work force is less than 1 percent short of the 17,900 prescribed by FAA's staffing standards. However, in total, air traffic control centers are staffed at 6.6 percent greater than the standards while terminals are 5.2 percent less than the standards. Since 1991 the Congress and FAA have been aware of staffing imbalances. These imbalances occur (1) between terminal and center facilities, (2)

among terminals, and (3) among centers. For example, FAA's recent staffing study, using current standards to measure imbalances, indicated that 210 terminals were understaffed by about 1,000 controllers and 167 terminals were overstaffed by about 800 controllers.

To ensure that individual air traffic facilities are properly staffed, the Congress required FAA to perform a facility-by-facility analysis and to report by December 31, 1991, on its staffing needs and the actions needed to correct the disparities. When FAA performed its analysis using May 1992 data, it identified problems with its staffing standards. According to Air Traffic Control officials, the standards do not adequately consider complexities unique to each facility, such as training and attrition rates. Therefore, FAA does not want to submit a report to the Congress until it develops solutions to the imbalances.

FAA recognizes that it must consistently and accurately measure staff needs before implementing a solution for the imbalances. Once staffing needs are accurately determined, FAA has several options for correcting the imbalances. These options include (1) assigning controller candidates to understaffed facilities, (2) reassigning controllers at overstaffed facilities to understaffed facilities, (3) allowing overstaffed facilities to continue operating with current staffing levels and not hire replacements for those that leave through normal attrition, and (4) contracting out towers and reassigning the freed-up controllers to understaffed facilities. FAA estimates that if it contracted out its level 1 facilities' operations at a rate of 10 per year it could save a total of \$93 million to \$101 million through the year 2012 without negatively affecting safety.

FAA officials are aware of these options and recognize the short and long-term limitations of implementing them. For example, in the short term, FAA cannot relocate controllers from overstaffed

facilities to understaffed facilities because FAA does not believe that it has sufficient permanent change-of-station funds to pay for the moves. In the long term, FAA's facility consolidation plan could have the effect of creating new staffing standards and requiring the movement of controllers to these facilities depending on how the consolidated facility is structured.

Opportunities for FAA to Better
Use Its Inspector Work Force

FAA's fiscal year 1994 budget request retains the current number of safety inspectors at about 2,500. These inspectors perform a multitude of activities that include inspections of commercial aircraft, general aviation aircraft, repair stations, pilot training schools, and maintenance schools. Therefore, FAA must identify opportunities to target resources to those areas needing the most attention.

Our recent reports on FAA's inspections of domestic and foreign carriers and aging aircraft illustrate the difficulty that FAA faces in providing sufficient inspection coverage.⁷ We recommended that FAA develop clear guidance for inspectors, defining which of their many high-priority areas should take precedence. During our review of aging aircraft, for example, inspectors told us that they also had other high-priority activities and lacked guidance to determine how many aging aircraft to inspect. FAA concurred with the need to develop clear inspection guidance.

⁷Aviation Safety: Problems Persist in FAA's Inspection Program (GAO/RCED-92-14, Nov. 20, 1991); Aviation Safety: Increased Oversight of Foreign Carriers Needed (GAO/RCED-93-42, Nov. 20, 1992); and Aircraft Maintenance: FAA Needs to Follow Through on Plans to Ensure the Safety of Aging Aircraft (GAO/RCED-93-91, Feb. 26, 1993).

We also recommended that FAA develop criteria for targeting inspections to high-risk conditions. Targeting will help FAA determine how it could best use its limited inspector resources. FAA agreed and has been developing the Safety Performance Analysis Subsystem (SPAS). SPAS is a computer-based system that analyzes information in various FAA data bases that, among other things, identifies potential problem areas for inspection emphasis. FAA plans to spend about \$10 million to develop the system through fiscal year 1995.⁸ The SPAS initiative is a step in the right direction. However, for SPAS to succeed FAA needs to resolve such issues as (1) defining the telecommunications network needed for the inspectors to enter and retrieve data from the system, (2) ensuring that the system is not too complex and that inspectors are trained on the system, and (3) ensuring that input data contain complete and accurate information. For example, the Program Tracking and Reporting Subsystem (PTRS) is a key data base that FAA plans to use in SPAS. We have previously reported that PTRS contains inaccurate data.⁹ We believe that SPAS could be an important management tool for targeting limited resources and both FAA and the Congress should pay attention to its technical problems now to reduce the potential for future problems with schedule delays and cost increases.

FAA Does Not Have Reliable Estimates on
Maintenance Technician Staffing Needs

At last year's hearing before this Subcommittee, the then-FAA Acting Administrator stated that the staffing standards for maintenance technicians were suspect and had not been closely

⁸FAA will require additional funds to purchase telecommunications hardware and software and provide training. FAA has not yet determined the amount of additional funds needed.

⁹Aviation Safety: Problems Persist in FAA's Inspection Program (GAO/RCED-92-14, Nov. 20, 1991).

evaluated. According to the staffing standards, FAA needs about 12,700 maintenance technicians in fiscal year 1994. In its budget, however, FAA is requesting an end-of-year staffing level of 8,923 for 1994, or 72 less than the level requested for fiscal year 1993 and 30 percent less than the staffing standards would require to maintain the air traffic control system.

We share FAA's concern about the reliability of the staffing standards because FAA has consistently maintained a high level of system availability with a less experienced work force that is well below the levels prescribed by the standards. As of February 1993 FAA had about 8,950 technicians to service equipment at almost 29,000 facilities. Furthermore, the average experience level of technicians has declined from almost 21 years to about 18 years since 1988. To help bridge the gap between estimated staffing needs and availability, FAA has relied more on contractors to maintain new equipment and on increased overtime usage. FAA now contracts for the maintenance of 17 systems compared to 6 in 1987. In fiscal year 1994 FAA is proposing to increase contract maintenance to 27 systems at a cost of about \$52 million. Also, FAA increased its use of overtime to almost 239,000 hours in fiscal year 1992, a 30-percent increase from fiscal year 1986.

FAA's efforts to compensate for staff and experience shortages, coupled with equipment redundancy, have kept overall system availability at about 99.8 percent. However, indications are that FAA's ability to maintain availability at 99.8 percent could deteriorate. For example, the mean time to restore equipment increased to over 14 hours in 1992, a 45-percent increase since 1988. Also, the experience and system performance levels could decline if the 2,100 technicians eligible to retire by 1995 leave the work force.

We do not know whether FAA will be requesting additional staff in the future, but it is clear that more accurate and reliable

staffing estimates would enable FAA and the Congress to make more informed decisions on allocating scarce resources. However, delays in commissioning CIP projects and facility consolidations will affect the number of maintenance technicians needed and where they will be assigned. To better utilize maintenance technicians, FAA is currently taking actions to (1) prescreen applicants and streamline the training process, thus shortening the time needed to progress to the journeyman level; (2) reduce work load by identifying more efficient means to accomplish the required activities; and (3) reduce maintenance activities not related to safety.

AIRPORT IMPROVEMENT PROGRAM ACCOUNT

FAA has the opportunity to leverage the about \$2 billion Airport Improvement Program (AIP) budget by funding projects that best achieve national goals, such as how much flight delays should be reduced or airport capacity increased. Last year we testified before the Congress on the need for such specific planning goals.¹⁰ Such goals would give FAA officials direction for making AIP funding decisions on the basis of how projects could improve the national aviation system. We also discussed the need for effective means to measure the contribution of projects to achieving goals that would help both the Congress and FAA revise, as necessary, AIP funding priorities. At this time, FAA has neither set goals nor established methods to measure project performance against goals.

Our recent review of a potential new Chicago-area airport, highlights shortcomings in FAA's strategic planning and analysis capability for AIP. We found that FAA headquarters and Great Lakes regional officials did not have specific goals for reducing flight delays nationally. Also, they did not evaluate how a new airport

¹⁰Airport Development: Improvement Needed in Federal Planning (GAO/T-RCED-92-30, Feb. 19, 1992).

could decrease flight delays system-wide and relied on the airport sponsors' analyses that focused on delays in the Chicago area. By analyzing the effect of projects on achieving system-wide goals, FAA can better determine how limited AIP funds should be allocated. Such analysis is critical given the impact that funding one project can have on the availability of AIP funds for other projects. For example, according to the new Chicago-area airport sponsors' analysis, annual discretionary AIP grants over a 5-year period would average from \$110 million to \$318 million, depending on the site selected. At this funding level the least costly sites could use the full allocation of discretionary funds typically available to the entire Great Lakes region. The more costly sites could use the full allocation of discretionary funds in several regions.

Until FAA adopts a more strategic approach to airport development that includes setting goals, selecting the most cost-effective projects to meet those goals, and measuring performance, the agency can do little to counteract airlines' arguments that many AIP-funded projects are not needed. Furthermore, FAA cannot be sure that limited AIP funds have been used for the most important projects. FAA officials agree that national goals need to be established and that such goals would provide operational benefits. FAA is now working on setting goals and determining methods to measure airport performance, but it has not established a time frame for completion.

RESEARCH, ENGINEERING & DEVELOPMENT ACCOUNT

FAA's RE&D program plays an important role in ensuring the safety, security, and efficiency of the U.S. air transport system. FAA is requesting \$250 million for RE&D for fiscal year 1994. Over the past several years, FAA has increased research in safety, security, and human factors.

In response to the Pan Am Flight 103 tragedy, the Congress directed FAA to, among other things, accelerate its research efforts for bomb detection, and explore ways to enhance aircraft survivability. The Congress' goal was to have new detection systems in place by November 1993. Accordingly, FAA's RE&D funding for security has grown from \$16.9 million in fiscal year 1990 to about \$36 million in fiscal year 1993--a 113-percent increase. FAA has requested \$36 million for security in the RE&D account for fiscal year 1994. FAA expects to obligate all its fiscal year 1993 funds and has over 40 projects to research detection devices.

At the request of this Subcommittee, we are assessing FAA's security research program, particularly the development of new explosive detection devices and methods to improve aircraft blast resistance (aircraft hardening). The following four issues illustrate the challenges that FAA should address to meet the high expectations of the Congress and the traveling public. These issues illustrate the challenges FAA faces in developing new technology for the aviation industry.

First, technical problems will prevent FAA from having new detection equipment--the centerpiece of its security research--at airports in the near future. For example, some advanced x-ray devices show promise in detecting explosives but are either too slow or have high false alarm rates. Also, FAA plans to spend about 23 percent of its security RE&D budget on vapor technology but has not determined how to ensure that the technology can reliably detect small amounts of explosives. Such devices "sniff" baggage and people for explosives and must discriminate between very small traces of explosives and much larger quantities of other materials. FAA expects to test several devices at selected airports later this year.

Second, FAA has not determined how much the new devices will cost the airlines. Industry estimates that the cost of a single

device could range from \$250,000 to well over a \$1 million. Because no single device can meet the existing threat, airlines will have to use devices in combination to detect a small amount of explosives, which could have a significant financial impact on the industry. According to FAA officials, they will conduct an economic analysis after they approve devices for airlines' use.

Third, industry has raised issues related to the cost, weight, and durability of blast resistant luggage containers. According to an FAA official, the containers that FAA is testing would add an average of about 3,200 pounds to an aircraft's weight, thereby increasing fuel use and operating costs. Also, because of their size, the new containers can be used on only about 25 percent of all flights--on wide-body aircraft that typically fly international routes. According to officials, FAA is working with industry to resolve these issues.

Finally, FAA needs to determine the relationship between detection and aircraft survivability. Last year this Subcommittee directed FAA to conduct a detailed analysis of the trade-offs between survivability and detection. Defining this relationship is important because if FAA finds that an aircraft could be made to withstand an explosion, then devices would not have to be as sensitive as FAA currently requires. Conversely, if an aircraft cannot be made to withstand an explosion, then the devices will have to be as or more sensitive. FAA expects to complete its analysis in 1995.

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In summary, our work has identified some significant challenges for FAA. In the F&E area, FAA must address three major challenges--fielding systems as promised, coming to grips with the budgetary impacts of facility consolidation, and strengthening the

acquisition process--to enhance the aviation community's confidence in the agency's ability to manage the modernization program.

In the operations area, FAA continues to face problems affecting its critical work forces--controllers, inspectors, and maintenance technicians. These problems include inadequate staffing standards, staffing imbalances at facilities, and the lack of systems to target resources to areas that pose the greatest safety risk. FAA has several options to correct staffing disparities at air traffic control facilities, but to successfully follow through on any plan will require FAA to first correct its staffing standards. FAA has taken positive steps toward developing a system for targeting inspector resources to high-risk areas, but FAA will have to resolve several significant problems before implementing the system. The maintenance technician work force has been able to preserve the high level of air traffic control equipment availability with staffing shortages and a decline in experience levels, calling into question the adequacy of its staffing standards.

With regard to AIP, FAA cannot be assured that program funds are used in the most effective manner without specific goals to guide funding decisions and means to measure performance against such goals. In the RE&D area, technical problems affecting the performance of bomb detection devices will preclude their being implemented at airports in the immediate future.

Mr. Chairman, this concludes my statement. We will be happy to respond to any questions you might have at this time.

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RELATED GAO PRODUCTS

Air Traffic Control: Uncertainties and Challenges Face FAA's Advanced Automation System (GAO/T-RCED-93-20, Apr. 19, 1993).

Air Traffic Control: Status of FAA's Modernization Program (GAO/RCED-93-121FS, Apr. 16, 1993).

State of the Airline Industry: Strategies for Addressing Financial and Competition Problems (GAO/T-RCED-93-21, Mar. 10, 1993).

Air Traffic Control: Advanced Automation System Problems Need to Be Addressed (GAO/T-RCED-93-15, Mar. 10, 1993).

Aircraft Maintenance: FAA Needs to Follow Through on Plans to Ensure the Safety of Aging Aircraft (GAO/RCED-93-91, Feb. 26, 1993).

New Chicago Airport: Site Comparison, Selection Process, and Federal Funding (GAO/RCED-93-105, Feb. 22, 1993).

Air Traffic Control: Justifications for Capital Investments Need Strengthening (GAO/RCED-93-55, Jan. 14, 1993).

Transportation Issues (GAO Transition Series) (GAO/OCG-93-14TR, Dec. 1992).

Aviation Safety: Increased Oversight of Foreign Carriers Needed (GAO/RCED-93-42, Nov. 20, 1992).

Airspace System: Emerging Technologies May Offer Alternatives to the Instrument Landing System (GAO/RCED-93-33, Nov. 13, 1992).

Air Traffic Control: Advanced Automation System Still Vulnerable to Cost and Schedule Problems (GAO/RCED-92-264, Sept. 18, 1992).

New Denver Airport Followup (GAO/RCED-92-285R, Sep. 14, 1992).

Detroit City Airport (GAO/RCED-92-169R, Apr. 30, 1992).

FAA Budget: Key Issues Need to Be Addressed (GAO/T-RCED-92-51, Apr. 6, 1992).

Air Traffic Control: Status of FAA's Modernization Program (GAO/RCED-92-136BR, Apr. 3, 1992).

Aviation Safety: Progress Limited With Self-Audit and Safety Violation Reporting Programs (GAO/RCED-92-85, Mar. 31, 1992).

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Aviation Safety: Commuter Airline Safety Would Be Enhanced With Better FAA Oversight (GAO/T-RCED-92-40, Mar. 17, 1992).

Aviation Research: Progress Has Been Made but Several Factors Will Affect Program Success (GAO/T-RCED-92-39, Mar. 10, 1992).

Air Traffic Control: Challenges Facing FAA's Modernization Program (GAO/T-RCED-92-34, Mar. 3, 1992).

Aviation Safety: Better Oversight Would Reduce the Risk of Air Taxi Accidents (GAO/T-RCED-92-27, Feb. 25, 1992).

Airport Development: Improvement Needed in Federal Planning (GAO/T-RCED-92-30, Feb. 19, 1992).

Aviation Safety: FAA Needs to More Aggressively Manage Its Inspection Program (GAO/T-RCED-92-25, Feb. 6, 1992).

Aviation Safety: Air Taxis--The Most Accident-Prone Airlines--Need Better Oversight (GAO/RCED-92-60, Jan. 21, 1992).

Aviation Safety: Problems Persist in FAA's Inspection Program (GAO/RCED-92-14, Nov. 20, 1991).

Aviation Safety: Emergency Revocation Orders of Air Carrier Certificates (GAO/RCED-92-10, Oct. 17, 1991).

FAA Staffing: Better Strategy Needed to Ensure Facilities Are Properly Staffed (GAO/T-RCED-92-8, Oct. 16, 1991).

New Denver Airport: Safety, Construction, Capacity, and Financing Considerations (GAO/RCED-91-240, Sep. 17, 1991).

Air Traffic Control: FAA Can Better Forecast and Prevent Equipment Failures (GAO/RCED-91-179, Aug. 2, 1991).

Aviation Acquisition: Further Changes Needed in FAA's Management and Budgeting Practices (GAO/RCED-91-159, July 29, 1991).

FAA Budget: Key Issues in Facilities & Equipment and Operations Accounts Need Resolution (GAO/T-RCED-91-58, June 5, 1991).

Major Acquisitions: Top Management Attention Needed to Improve DOT's Acquisition Process (GAO/T-RCED91-45, Apr. 24, 1991).

Air Traffic Control: Status of FAA's Modernization Effort (GAO/RCED-91-132FS, Apr. 15, 1991).

Aviation Safety: Limited Success Rebuilding Staff and Finalizing Aging Aircraft Plan (GAO/RCED-91-119, Apr. 15, 1991).

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FAA Staffing: New Pay Act Offers Options to Bolster Maintenance Work Force (GAO/RCED-91-92, Apr. 2, 1991).

Air Traffic Control: The Interim Support Plan Does Not Meet FAA's Needs (GAO/RCED-90-213, Sept. 11, 1990).

Air Traffic Control: Continuing Delays Anticipated for the Advanced Automation System (GAO/IMTEC-90-63, July 18, 1990).

Serious Shortcomings in FAA's Training Program Must Be Remedied (GAO/T-RCED-90-86, June 6, 1990).

Air Traffic Control: Ineffective Management Plaques \$1.7 Billion Radar Program (GAO/IMTEC-90-37, May 31, 1990).

FAA Encountering Problems in Acquiring Major Automated Systems (GAO/T-IMTEC-90-6, Apr. 26, 1990).

Issues Related to FAA's Fiscal Year 1991 Budget Request (GAO/T-RCED-90-66, Apr. 18, 1990).

Air Traffic Control: Status of FAA's Efforts to Modernize the System (GAO/RCED-90-146FS, Apr. 17, 1990).

Issues Related to FAA's Modernization of the Air Traffic Control System (GAO/T-RCED-90-32, Feb. 27, 1990).

Aviation Safety: Management Improvement Needed in FAA's Airworthiness Directive Program (GAO/RCED-90-94, Feb. 16, 1990).

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ACQUISITION MANAGEMENT

Mr. CARR. Let me ask you a few questions about acquisition management. But first, I think it is important to note to our audience that it has been our custom for many years, I think as long as I have been on this committee and we have had an FAA modernization program, that our testimony or oversight of the FAA budget has been preceded by General Accounting Office testimony.

This year we have asked you to do the same for other modes of transportation and it has taxed your resources. We appreciate that, but we find that your auditing of transportation programs across the board has been very helpful to this committee.

Turning now to FAA, how many years have you done this now?

Mr. MEAD. I think I have done it for about four years and we did it for a couple of years before that.

Mr. CARR. So this is not something you have just begun. These investigations, the oversight that you help us with, is not something that happens just because of this hearing and just because we might have a wider audience today.

This is something that has been done year after year and I think it is important to state that, so that people also know that you have a rather long-term commitment, a long-term look at what has been happening at the FAA in all of these areas.

On acquisition management, the effort of the FAA still, as you pointed out, is suffering schedule delays and cost increases. I think your testimony was that the cost increase is about 55 percent. Schedule slippages average about five years. I think that is your testimony. And apparently it is because the FAA consistently underestimates the technical risk involved in developing programs, at least with respect to the time line, not the cost, but at least the time line.

To what extent does the FAA formally investigate risk in its acquisition process? What more could be done? We hear a lot on the committee about risk analysis these days where people can say that a program will be of a certain technical risk, will be accomplished in five years, but then attach to that five-year estimate a risk level that the five years may not be met.

Apparently there are those in the industry now who can assess risks of forecasts being accurate. It was explained to the committee in another briefing we had, that when you have a weather forecast, in the old days the weather person would come on and say it is going to rain today, and then of course if it didn't rain, people wouldn't believe the weather forecaster anymore. Too many days of: It is going to rain today or it is going to be sunny today. But now you get weather forecasting that says there is a 40 percent chance of rain.

In other words, the forecasts become much more believable because the forecaster essentially gives the listener the tools with which to assess the reliability of the forecast and doesn't assign to his or herself the omnipotent power to determine whether it is going to rain or not. And yet, we have testimony year after year before this Committee by all the modes, not just FAA, saying, well, this will be done in five years, and then five years it never is done and so the believability before this committee and the American

public gets kind of ragged and pretty soon you just don't listen to what is being said and you have great skepticism.

So I guess the overall question is, to what extent does the FAA investigate risk in its acquisition process and to what extent, if they do that, do they explain that to the public and to this committee?

Mr. MEAD. I would ask one of my colleagues to amplify on my quick response to it. But most of the systems that we are reporting delays on now and cost increases and so forth, were ones that were conceived in 1983, 1982, in that period. At that time, I think it is a fair statement that FAA thought that it was going to be acquiring systems that were essentially off-the-shelf equipment without a great deal of consequential risk. They were incorrect.

That says something—that is a statement about the quality of the technical risk analysis they did at the time, which is to say, they did very little of that.

I believe that FAA has, over the years, learned some very hard lessons and the acquisition processes they have in place today call for that type of assessment at the very earliest stages of an acquisition. They have gotten somewhat better, but they have a long way to go.

Mr. LEVIN. I would add that in the second phase of the acquisition process, where the analysis of alternatives is supposed to occur, one of the basic elements is analysis of risk. As we reported to you on the mission needs report, the first phase of the acquisition process, the experience of this committee is with the FAA coming up and saying, "trust us, we really need this," without a lot of support of why they need it.

The same thing occurs in the risk analysis area. I think you have seen a history of FAA coming up and saying, "Trust us, in five years we can get this thing done." I think they need to provide us with information how they are addressing the risk, whether it is software development risk some other kind of risk, and why they think they can get it done in five years.

So there needs to be sort of a shift in FAA's approach from "trust us" to "let us show you why," and we are starting to see that.

Mr. MEAD. Let me give you one concrete example that comes to mind. There is one system that FAA is acquiring, it is designed to replace a system that has about eight hours of down time a year now. They wanted to get a system that would have four seconds of down time a year. Going from eight hours on one end of the spectrum all the way to four seconds on the other end of the spectrum requires a great amount of technical risk, and that brings with it delays.

I don't think FAA realized how serious some of those risks were when they established specifications that were that rigid.

Mr. CARR. Which system was that?

Mr. LEVIN. VSCS.

Mr. MEAD. And as you know, we have had rather substantial price increases on that. I think it has tripled.

Mr. CARR. The VSCS cost has tripled. How far behind are they?

Mr. LI. About six years. Mr. Chairman, just going back to your historical perspective, yes, indeed, we have been looking at modern-

ization now for almost 10 years, ever since the program started. I was writing some notes in terms of the risk mitigation type activities that FAA might be implementing.

One Ken had mentioned already is policies. There is a more disciplined approach now in FAA as far as acquisition management and I think that is a positive sign. It is something that they did not have early on in the program.

Second is the acquisition approach. We talked about this issue when discussing AAS last week. It was a big bang approach, trying to do too much in one single package. It wasn't as manageable as it should be. I think in retrospect, FAA could probably have tried to make it in smaller pieces and therefore more manageable. So that is a risk mitigation activity there.

And finally, in terms of software development and trying to invent new types of technologies, perhaps one way to mitigate risk is to try to acquire more commercial off-the-shelf types of products.

Mr. CARR. You mention the off-the-shelf dilemma that the FAA was confronted with. Is it possible now that more off-the-shelf products are available today than there were in 1982 for what the FAA is trying to achieve?

Mr. LI. I think the technologies are definitely there. It is a matter of the FAA requirements themselves. Let me just give you an example. A few years ago, when they were trying to acquire new printers for the flight strips, there were many printers available commercially.

However, FAA had a special requirement for specifically, upper and lower case, but all had to be in caps. That was not something that was available off-the-shelf. So a vendor still had to make some modifications.

Therefore, depending on whether or not FAA can perhaps change their requirements, yes, definitely there would be less development required.

RISK ASSESSMENT

Mr. CARR. In what ways should the Committee help the FAA? Should we have a dedicated program of risk assessment, or is that unnecessary? If we were to earmark some money for risk assessment in the acquisition process, would that be helpful or harmful?

Mr. MEAD. Offhand, I would be concerned that they would view that as, well, here is a pot of money and with this pot of money we are supposed to engage in risk assessment, and if more money was required, they would say, well, we weren't able to do this type of risk assessment because we didn't have enough money to do it.

I think that risk assessment is something that should be integrally entangled with all aspects of the program, particularly in the early stages.

One action the subcommittee can take is when you see new projects showing up in the budgets that are going to cost a fairly substantial sum of money, those projects should have an extensive analysis behind them, and it is not unreasonable to expect that by the time you get the budget.

I don't see why you should be asked to come up with \$50 million or more dollars for a project that doesn't have a well-documented

risk analysis, an analysis of what the alternatives are, the off-the-shelf approaches and that type of thing. In fact, FAA's orders require that at the present time.

Mr. CARR. Well, I think it is easy to say for new projects, and of course I am a new Chairman here. I can hopefully encourage people to do things that they weren't encouraged to do in the past and I am going to do that. But I don't care whether it is the FAA Administrator or an Acting Administrator or a new Chairman of a Committee or a new President.

At some point you have to also spend a lot of your time dealing with something that your predecessor started and I think that my biggest problem isn't how do we do things better in the future. I think we are all well on the track of doing that. The problem was that over 10 years ago, a multi-billion dollar modernization program was commenced, ill defined at the time—well, I don't want to say that even. It may have been fairly well designed and thought of given what was going on in 1981 and 1982, but it clearly didn't have a very long shelf life.

The nagging problems in front of this Committee aren't the things that we start new. I think some of the new things that are going on are really quite well done. It is how do we get our arms around these old things, because we keep reinventing the old things. We just had, and I don't want to go into great detail today because of the fact that last week we did have a very long hearing on AAS, the advanced automation system, and I don't want to revisit all of that.

Of course Members as they come in may want to ask some questions on that if they weren't able to be here on that hearing day, but by and large, I think that subject is behind us. But it is clear from our hearing on the AAS last week that we collectively, Congress and the executive branch, just didn't know enough to launch as ambitious a program as was launched back in 1982, and so we have had to reinvent it. There has been a wandering rationale for things. There has been technology in search of missions. There has been redefinition of what the outcomes were supposed to be.

We have spent all of this money and we haven't dramatically reduced the amount of air traffic delays.

Now, it could be said that had we not done anything, they would have grown tremendously and at least we stopped that growth. History doesn't disclose its alternatives, and so making a comparison isn't always fair, but it is clear that now the AAS is being proposed, not because it is going to reduce air traffic delay, but it is being proposed as a productivity enhancer.

Well, maybe not even that because we were told that AAS was going to lead to the consolidation of a lot of facilities, and now the FAA has announced a limited consolidation plan. So we are not going to get that. So we have these wandering rationales. Is it any wonder that you can't assign and get risk assessment into this process. It is very, very difficult.

So at some point you want to freeze the situation, take what your predecessors have caused to be started and try to conclude them in the most favorable terms to the taxpayer, and so it is risk assessment in midstream that I guess is the problem. What can we do to do risk assessment in midstream?

One of the problems is human behavior and politics, I mean, getting a good honest risk assessment before any money is spent, I think, is key. Once you start spending money, then you get constituencies and you get interests and you get jobs committed to this and careers committed to that, and then performing risk assessment in the middle of that becomes very, very difficult.

So as we look to this modernization that was started so many years ago and try to conclude it successfully, and under the most favorable terms to the taxpayers, what can we do? A pot of money you say won't work. That will just create other crazy incentives.

Mr. MEAD. Let me give you an example, a big money example. What I believe is the second most expensive acquisition in the modernization plan is the microwave landing system. Now, for years, FAA had proposed that it would be a universal replacement for ILS. I think you know that. This is a \$2.6 billion undertaking.

Well, if I was in the subcommittee's shoes, I would not allow that to go to full production until I knew on a runway-by-runway basis what types of precision landing equipment you wanted. ILS may be just fine in some places. ILS with some enhancements might be just fine in others.

You have satellites coming down the road, and that may be just fine. Either way, there is a lot of money involved here. I don't think you need as many microwave landing systems as they had originally proposed. Before the procurement goes forward, I think you could mitigate risk, save the industry money, and save the trust fund money by doing a runway-by-runway analysis.

Mr. LEVIN. And fully assessing all the alternatives, which we have been supportive of and the committee has been as well.

Mr. CARR. Well, I think that is an easy recommendation to adopt. I don't speak for the other Members of my committee, but I would think that we would be interested in doing something like that.

Mr. LEVIN. Mr. Carr, if I could interject, I think each system is different. When you talk about systems that are pretty far along, like the ASDE radar or the ARSR radars or TDWR, each system is sort of its own story. So when you think about ways to mitigate risk for projects that are pretty far along, you have to look at where they are in the testing, where they are in terms of site prep and everything. It takes an analysis of each one specifically, I think.

Mr. CARR. Would we be doing everybody a favor if we were to require the FAA to attach probabilities to their estimates?

Mr. LEVIN. Well, they don't have a very good——

Mr. LI. I think that would be a difficult thing to do because then you would have to look at how they went about the methodology of deriving those particular probabilities.

Mr. CARR. At least maybe they would get some methodology. I mean, it is——

Mr. LEVIN. I kind of like it.

Mr. CARR. It is my old example. I mean, someone sits at that microphone and has a lot of moral authority and says, we need \$4.6 billion for this program. Shouldn't we be asking the question, well, what is the probability it will rise to \$5 billion? Is there any probability it will be coming in at \$4 billion?

Mr. LI. Mr. Chairman, it depends on which time that particular project is. If it is at the inception of the project, your probability would be very low. If you take a look at some of these projects now where you have committed already 90 percent of the funds appropriated, obviously the probability is going to be high.

I wanted to address one point you made and that is worthy of discussion. When you try to reduce risk so much, it may come at the expense of extending the project or making the schedule that much longer. For example, one of the measures that you could incorporate is to require a full-blown test before a production decision.

Up to now we have had limited types of capabilities in terms of demonstration that FAA has provided. For example, the VSCS program we talked about a few minutes ago. The prototype handled 60 positions. The final equipment requires 430 positions.

If you were to mitigate risk totally, you might say you have to demonstrate 430. That would obviously extend the schedule to a point where FAA might find that not acceptable. That is the type of trade-off that you might have to apply.

Mr. MEAD. I don't think you are being unreasonable, to directly respond to your point on the probabilities analysis. It seems almost self-evident that this is something that an agency would intuitively include in justifications for its projects.

For example, if you look back in the advanced automation system, the original estimate was \$2.1 billion and we are at least, at least at \$5 billion now.

Mr. CARR. Well, this Committee, which is responsible for guarding the taxpayers' money and assuring that they are well spent, gets caught in the middle.

I mean, the taxpayers have no tolerance for cost growth and they don't know the details. We are supposed to know the details, and yet I fear this Committee hasn't been asking the right questions to get the answers, and today's hearing is about the FAA but there are many others.

It happens to be a big piece of the Department of Transportation, but there are others. We need to get some kind of a risk assessment forecast of how likely the number is going to hold, and then get some accountability going with regard to whether those numbers do hold in that percentage of time.

If we don't do something, there is a delink between the taxpayers and the public servants. This committee is the interface and we bear a lot of responsibility for that if we don't do better. I don't think the average citizen working hard every day wants to spend as much money as they do on taxes, but even if they have to, they want to make sure, they want to have a feeling that it is being well managed, and when you get story after story out of Washington about schedule slippages and cost overruns, it just suggests that somebody isn't managing things well. I think risk assessment might help us in this regard.

I have many more questions, but before I go on to another topic area, I want to recognize my good friend, the Ranking Minority Member from Virginia, Congressman Frank Wolf.

TERM FOR FAA ADMINISTRATOR

Mr. WOLF. Thank you, Mr. Chairman. Mr. Mead, welcome back to the committee. I think the biggest solution for accountability, and I would like to get your comments on it, could be gained in one way. I have personally always believed that the term of the Administrator for the Federal Aviation Administration ought to be a 10-year term, it ought to be a professional job similar to the head of the FBI or something like that.

Since 1982 we have had, what, four administrators?

Mr. MEAD. Eight to nine, including the—

Mr. LI. Including the acting administrators.

Mr. WOLF. If you didn't include the acting, what have you had?

Mr. LI. Probably about five.

Mr. WOLF. And during that period of time, we have had large gaps of time with no confirmed administrator. This time we have a gap of three, four months. It could even go longer. Has the administrator's confirmation date been set?

Mr. MEAD. Sir, I don't know who the administrator designate is.

Mr. WOLF. I understand there are names. So we may have a gap this time of six months, and I think that is really the greatest problem. The man who came up with the AAS system, Lynn Helms, is gone. There has really been no accountability, and we have had great turnover at the top.

I think the best thing that could be done—and I have often thought of introducing legislation because I don't think we could do this in appropriations committee—is to have the FAA administrator confirmed for a set period of time so that one man or woman could come in and stay with a program. There would be that continuity that we don't have.

Do you have any feelings about that?

Mr. MEAD. Yes, sir, I agree with you. You may recall several years ago there was a lot of debate about whether the FAA should be part of DOT, whether they should be a private corporation or quasi public corporation or just what. In our analysis of the situation, I think that to take on a program as big as this, which has turned into a \$33 billion undertaking through 2000, it would be very difficult for an administrator who is going to be there for two, at the outside, three years, to really be able to manage that program and have a vision of the future for it.

Sir, in all honesty, it took me probably a year-and-a-half to get reasonably fluent with the modernization program, and I suspect that any new administrator has to go through an extended education period. I agree with you.

Mr. WOLF. Well, I think that may be the problem, because in fairness to the men and women at the FAA, they are very reluctant to move out and take bold action, particularly if they are involved in a lot of these programs. When there has been a change of administration; employees are waiting to see who comes in at the top.

As an employee, you really can't move too quickly because you have an obligation to the new management. If you do move too quickly, especially as a career person; your career could be negatively impacted. I think you would find a lot of the problems that

the Chairman raised and the committee has raised over the years to be resolved or at least narrowed quite a bit if you had one person, for a 10-year appointment. You should get the very best in the business, not necessarily a political person, just purely a technical person. Because air safety and other complex FAA issues really are not Republican issues or Democratic issues, or liberal issues or conservative issues. Probably 95 percent of what the FAA does is purely technical, and I think steady leadership could go a long way to solving the problem.

The other question I was going to ask you is, do you think the Congress, over the last several, 10 years, 12 years, 15 years, has given the FAA too much to do?

Mr. MEAD. Too many responsibilities?

Mr. WOLF. Too many responsibilities as different problems come. Hijacking came. That was not a problem years ago. Now hijacking is a big problem. Do you think we have given the FAA too many assignments?

Mr. MEAD. In a sense, I do, but I think it was unconsciously done. For example, with the deregulation decision in 1978, I don't believe that anybody could have foreseen the burden that FAA would face, the advent of the hub and spoke system, which certainly had profound ramifications for air traffic control.

The growth in air traffic during that period, the financial problems of the industry, these things were very difficult to perceive but they all resulted in an exponential increase in FAA's responsibilities.

But to link back to your earlier point, I think that an administrator with a term of five years would be better than what we have at the current time and would have helped in some important ways.

You recall last week we talked about facility consolidation. This is an issue that has been shuffled from one administrator to another, and ultimately Mr. Del Balzo, with a new Secretary of Transportation, made it—we don't have an administrator in there but this is something that could have been decided a long time ago, but politically difficult.

Mr. WOLF. Thank you. I have no further questions, Mr. Chairman.

MISSION NEEDS

Mr. CARR. I would like to turn to the general topic in your testimony that the FAA has been required to more effectively define its mission requirements, and of course, the important first step in that has been the mission needs statements.

Your testimony is troubling on this point. It seems you found that the important requirement documents are being approved only on the thinnest of measurable supporting data, that they were merely asserting the need as opposed to measuring the need. Could you explain more fully why? I know that you can't do motive analysis, and you can't do a psychoanalysis of the agency, but is there something that is lacking in the procedure here as to why we get mission needs statements that are still not well defined, that merely assert the need as opposed to pointing to measurable supporting data?!

Mr. MEAD. Let me defer on that one to the people who actually did the work, that were closest to it.

Mr. WURSTER. In our report we made a couple recommendations. One was that FAA should enforce its own requirement that these projects need quantified support. And I think probably a lot of the reason is that people are just not used to doing it. Also, the people in FAA know their system very well. They feel they know their needs. If they put them down on a piece of paper and say the system is not working that is out there now, that we need a new system, they feel like that should be good enough to justify the investment. So I think it is going to take a little bit of time for people to get used to gathering the data.

We also talked about, in the report, that the data resources are not always easy to marshal within the agency. It is going to take a little time for people to get used to doing things the new way.

Mr. LEVIN. We sort of said it was a cultural problem, too, that they have this history of being able to justify projects without a whole lot of support. And now committees and GAO are asking tough questions like, "Show us, prove it to us," which are questions maybe they haven't gotten in the past. I think it will take time for the Agency to start to ask the tough questions of itself; and I think we are seeing that.

We have seen certain mission needs statements come up to the Acquisition Review Committee in FAA and get rejected because there wasn't support. It is going to take time. It is a question of getting the analyses done and proving it to FAA management, then ultimately people on Capitol Hill.

Mr. MEAD. It is a numerical perspective on this mission needs situation. Of the hundred mission need statements, four of them were actually rejected in the FAA; 18 of them, if my recollection is correct, were withdrawn voluntarily because people realized that these are being taken more seriously now.

We looked at 25 of the approved ones, accounting for about \$5 billion in overall cost in fiscal 1994, and I would say about half of those were seriously deficient. And FAA, in my view, does not disagree with that.

Mr. CARR. Can you name those?

Mr. LEVIN. We could. Do you want us to provide that for the record or give you a couple of examples?

Mr. CARR. Give us a couple of examples here today.

Mr. LEVIN. We are concerned about the D-Brite mission need statement. You want to explain a little, Bob?

Mr. WURSTER. Yes, FAA purchased and installed 200—well, they are probably not all installed by now, but 258 D-Brite—

Mr. CARR. Do you mind explaining for the record what a D-Brite is?

Mr. WURSTER. It is basically a predecessor for the towers, to what AAS will bring. That is new consoles, a way to bring information into the tower. And they have asked—

Mr. CARR. It is like bright scopes, digital bright scopes?

Mr. WURSTER. Right. They have asked for a mission needs statement for another 130-or-so D-Brites, but yet they didn't measure any benefit from the first 258.

Another example was Aviation Weather Products Generator, which is a new weather system that is supposed to generate new and faster types of weather products in the centers. They made a statement in the mission need statement that pilots generally now ignore en route weather warnings, but yet they didn't provide any quantification. There was no survey of pilots to say whether that was true. That is a pretty strong statement.

PROJECT LIST OF GAO ANALYSIS OF MISSION NEEDS

Mr. CARR. Well, I would like it if you would supply your entire list to us for the record, and if you can do that fairly quickly, so that we can include it in our deliberations this year.

[The information follows:]

The major thrust of our analysis of mission need statements was to identify deficiencies noted in the statements and then to determine if those deficiencies were supported by quantitative or qualitative evidence. Our analysis found that of 110 deficiencies cited in the 25 mission need statements, only 42 were supported. Listed below is a project by project recap of our analysis.

Name of Project	No. of Deficiencies	No. of Deficiencies Supported	FY 1994 Request in millions
Aeronautical Data Link	1	1	1.7
Alaskan National Airspace System Interfacility Communications System	4	4	13.0
Aircraft Fleet Modernization Flight Inspection System	5	3	37.9
Aircraft Related Equipment	8	2	12.0
Aviation Weather Products Generator	3	0	14.3
Display Channel Complex Rehost	3	3	10.8
Digital Bright Radar Indicator Tower Equipment	0	0	8.0
En-Route Software Development and Support II	3	0	10.6
Enhanced Terminal Voice Switching	7	1	1.0
Field Maintenance Support Contract	1	1	Note a
Flight Service Automation System Computer Replacement	15	2	14.6
Integrated Terminal Weather System	2	0	9.0
Instrument Landing System and Visual NAVAIDS Engineering and Support	6	2	Note b
Low-Level Wind Shear Alert System Upgrade	5	5	0

Meteorologist Weather Processor II	6	1	1.4
Oceanic Systems Development and Support	5	3	27.0
On-Site Simulation Based Training System	13	3	24.3
Precision Runway Monitoring	1	0	27.0
Radio Control Equipment	5	3	14.9
Recovery Communications Project	5	3	6.8
Terminal Air Traffic Control Automation	1	1	8.65
Terminal Enhanced Weather System (ASR-9 wind shear modification)	3	0	1.0
Terminal Radar Digitization, Replacement, and Establishment	2	1	3.0
Terminal Software Development	2	1	7.4
Terminal Voice Switching Replacement	4	2	26.6
Totals	110.00	42.00	280.95

Notes:

a - The Field Maintenance Support Contract is part of FAA's Operations appropriation account. The specific FY 94 request was not available from FAA's budget documents.

b - FAA's F&E budget request lists various line items for Instrument Landing Systems and NAVAIDS. We could not tell which part of those line items was supported by this mission need statement.

FAA'S USE OF DATA SOURCES

Mr. CARR. I think what you say is true. There is a bit of a cultural change that needs to take place throughout all of government basically, not just the FAA, but the voters don't trust us; and so the point is we have to document, we have to measure, we have to persuade, and we have to make a case.

I think that comes very hard for a lot of sincere, dedicated public servants, civil servants, who for years and years and years have not had to meet that kind of a test. But those of us who go through elections and those of us who successfully went through the last election know that the culture has got to change. And we need to help people who aren't elected understand that there is a deep cultural change going on in this country, and that as part of their agility as civil servants, that they get on board with that cultural change.

And I think they will. I have never met people in the Civil Service who I didn't think were dedicated, trying to do the right thing. The days of "trust me" are over, however, it seems to me.

We were mentioning the data. It seems to me that there are few agencies in government that have the data that the FAA has. The FAA, at least theoretically, has more sensors of what is going on in this country than perhaps even some of the intelligence agencies, just by sheer number of the radars they can spot. When you get more than about a hundred feet off the ground, the FAA knows where it is almost always in real time. They have a lot of data, they interface with a lot of people.

The population of users of the air traffic control system is fairly small. I mean, there are a lot of end users, the customers, the people in the back of the plane, but if you take into account the entire pilot, the flight crew population of America, together with the entire management of airlines, together with all of the maintenance folks, general aviation, business aviation, given other forms of activities it is really a fairly small number of people.

It is a large number, but relative to other human activity, it is a small, fairly well-defined, highly educated and generally disciplined population. So it would seem that it wouldn't be terribly hard for the FAA to say that it has the data, or for someone here to say that the FAA has the data.

Now, are they not using the data right? Do they need help in getting to measurable results? They measure almost everything.

Mr. MEAD. The problem, Mr. Chairman, at FAA, is different from the problem we talked about last week with the Coast Guard. It is different from the problem at FRA, it is different from the problem at NHTSA.

By far, the Federal Aviation Administration is data rich. The data is over there somewhere; it often is not used. We found this particular phenomenon when we were analyzing the various mission need statements for these new acquisitions, that often the people putting together the justification would not go to the data source, but there was a data source in the agency. Not saying that their data is perfect, but I think your remark is rather on target.

Mr. CARR. Well, what could we do, what should we be doing as a Committee to encourage better use of the data-rich agency that we

have in front of us? I mean it would seem to me that—and we will get into this a little bit later on, indeed, with the FAA in their testimony. The FHWA has a database which samples 50 percent of the Interstate Highway System and their plan is to go to 100 percent of the Interstate Highway System. It would seem to me that the FAA would have the ability to sample in a corresponding way, runway condition, 100 percent of every runway in this country. That wouldn't be too hard.

Now, that is a data area where they are not rich, I happen to know that they don't have that. I mean in terms of the highways in the air, the three-dimensional highway through the sky, the FAA has a lot of data on that. It is very rich in that area.

Mr. LEVIN. Mr. Carr, I don't think it is a funding problem. At least, it has never been explained to me that it is a funding problem. I think if you require them to provide it, they will provide it.

The problem is, in the past, FAA hasn't been challenged to provide that support and documentation.

Mr. MEAD. Often when we are doing our work, Mr. Chairman, we use FAA data to make our point. They may not be aware of what their own data says.

Mr. CARR. Your statement says that the mission statements of the FAA are seldom based on analysis of performance, which would have measured how well the current systems are operating. It seems that they have a tendency to say, well, we want this new thing because it is needed, without much support.

It seems they also assume the conclusion that what is currently going on is inadequate. Is that right?

Mr. MEAD. Yes.

Mr. CARR. And that that's not based on any measurable performance data; or is it?

Mr. MEAD. Well, on a large number of the ones we reviewed, it was not.

Mr. CARR. Well, if they don't base their capital investments on improving system performance, then what do they base them on?

Mr. MEAD. A feeling.

Mr. LEVIN. If I could interject just one thing, just because the mission need statement doesn't have a good justification doesn't mean there isn't a good justification. There may very well be a good justification buried down somewhere in somebody's brain or in somebody's file cabinet or computer data set. They just didn't necessarily provide it.

But, you know, if they don't provide it you sort of raise the question, do they really have it? And what we are asking them to do is document it, support it, provide it. And then we will be able to understand why they need it.

FAA ORGANIZATION

Mr. CARR. Is part of this problem the cultural thing. Is there a problem in the way the FAA is generally organized?

For example, we have these somewhat semi-autonomous regions in the FAA. Of course, this has been an old debate in aviation circles. Is it time to end up eliminating the central authority in Washington and giving all the power to the regions, or should we go the

other way and eliminate regional offices and centralize the Agency?

And I get to that point because it seems to me that in this fairly awkward structure that the FAA has, it is very difficult to line up accountability sometimes. Not all the time, but sometimes. Particularly when you have people who say they need something. Does management of FAA have to risk damping the morale of people in the FAA by saying, tell me why you feel you need it; but I don't feel you need it, so tell me why I should feel you need it, because I have got to go and talk to Bob Carr and his colleagues on Capitol Hill, because they don't feel you need it.

We can't feel our way to progress in this area. But maybe the managers don't want to do that because that becomes a morale thing and it ends up part of that internal corporate culture in the FAA. You know, your rank is relative not to how you perform, but to how much you are trusted. Is that a problem?

I'm not saying it is a problem; you have looked at the agency in greater depth and a longer time than most of us.

Mr. MEAD. Well, I should let my colleagues join in here, but my own sense, Mr. Chairman, is that things are getting more teamwork oriented in FAA in the last year. One reason for that is because, as you may recall, we were going through a reorganization over at FAA at the pace of one every seven or eight months for a period of two or three years, if I recall correctly. And it was very difficult to explain what the organization over there was.

But over the last year-and-a-half I think things have stayed relatively stable.

Mr. LI. I agree with Ken.

And you mentioned the regions, Mr. Chairman. About two or three years ago, FAA did recognize the regional issue as part of doing some reforms. I believe it was under Administrator McArtor. FAA recognized the fact that the regional structure was not providing the sort of timely input that was required in their whole organization.

As a result of the streamlining reform, regions have a different type of partnership arrangement with headquarters. The people out in the regions are in essence working with headquarters instead of having the individual fiefdoms, that perhaps you are referring to, of a few years ago. So I am encouraged by that sort of change.

FAA ADMINISTRATOR

Mr. CARR. Let's talk just briefly about that, I want to take this opportunity to associate myself with the remarks of the gentleman from Virginia.

My frustration has been the rotating leadership at the FAA. I think that has been a real frustration for this Committee over the years. I have come to believe that, at least for the operations side of the FAA—perhaps not the investment side, but the day-to-day operations of so many important things that the FAA does—we would be better served by an administrator that has a term of office that spans the possibility that that person would be entirely

captive by one administration. In other words, that person's term should be longer than the term of the President.

I think that that would be a happy medium to this endless debate about whether the FAA should be inside of Transportation or its own independent agency. I think where it is, what box it has on the organizational chart, is probably less an issue than having steady and consistent leadership that has time to enforce its will and its changes.

If I were in the FAA, if I were a dedicated civil servant in the FAA and I had a directive come from the administrator's office, and it was a directive that I didn't really agree with personally, I might have an incentive to try to do accommodation, appeasement, but no real change; because based on history, that person would be gone within a relatively few months, and then maybe the next person wouldn't even take up that cause, and I wouldn't be bothered with it anymore.

Mr. MEAD. We have seen that; we have seen that where, in truth, the troops are correct. The administrator will be gone in a couple years, I mean, if the history is any indication, and some of these initiatives say, yes, well, in time—we will sit tight and in time he or she, too, will be gone and a new agenda and new initiatives will come into play. An agency that is undertaking programs like FAA just can't and should not be expected to shift gears like that every couple of years.

Mr. CARR. Well, I want to turn to a different subject, and I want to give my colleague an opportunity to jump in here before I do that.

Mr. WOLF. No, I am fine.

MICROWAVE LANDING SYSTEMS

Mr. CARR. I want to talk about the microwave landing system. Your statement says that the FAA has an opportunity to assess alternatives to the microwave landing system, but then again, they have always had that opportunity, I guess.

Why is there anything different today than there was in the past?

The microwave landing system has just never really gotten off the ground in any great and meaningful way. We spent a lot of money on it, but haven't we got to the point where we are so overly committed to it that we can't stop it altogether? Maybe we should just end the microwave landing system idea.

You are shaking your head no.

Mr. LEVIN. I don't agree.

Mr. CARR. Okay. Well, tell me why.

Mr. LEVIN. As you know, we support the development of MLS because it is not known, for example, whether satellites can deliver on Category II/III landings. I think it is basically as simple as that. And there are certain places in the country where ILS just cannot be sited because of various siting constraints or frequency congestion or whatever. One might have to use MLS.

Now, there is an international agreement that says FAA will install MLSs around the country where international runways exist. I don't know if that is so much of a constraint or not. But clearly,

until we know the full technical limitations of satellites and MLS, it is hard to make a decision on one option or the other.

Mr. CARR. Well, maybe we shouldn't go forward very fast until we do know that.

Mr. LEVIN. I agree with that.

Mr. CARR. Because at some point maybe the alternative will disclose itself. We shouldn't wait too long, but—

Mr. MEAD. What was happening when we did that review, we found they are emphasizing the MLS to the exclusion of other alternatives. And what we will probably end up with in this system is a mix, some MLS, some ILS, possibly looking forward to satellites, some perhaps ILS enhancements.

But the FAA was emphasizing MLS, and it seemed to us possibly foreclosing other alternatives such as those I was just describing.

LANDING SYSTEMS

Mr. CARR. However, at some point—and I don't know how the major airlines feel about this, but I know the predictable reaction from general and business aviation, and that is how many boxes do you want me to carry? I mean, how much stuff do you want me to put in the cockpit? My press chart is already complicated enough; why do I want to have five different ways of getting to the end of the runway safely?

I don't want five ways, I only want one. Or I want systems that are compatible with one another, even if the sensor is different. You know, I want a compatible system, but if there are five things out there, I don't want to know that. The machinery and the electronics in my aircraft don't want to know that. We just want to know where we are supposed to be and when.

Mr. LI. Mr. Chairman, our understanding is that by fiscal year 1995 FAA will be in a position to be able to compare the technical feasibility of using satellites and compare that with the demonstration programs which they are undertaking right now on Category II and III MLS devices.

Mr. CARR. So in other words, it would seem prudent that we not accelerate MLS?

Mr. MEAD. Yes.

Mr. CARR. It is already behind schedule. Maybe that was fortuitous, because when this whole thing was designed, we weren't thinking of satellites.

Mr. LI. That is right.

Mr. CARR. So maybe we lucked out on this one, that schedule slippages and a whole host of other things have actually opened new alternatives. In other words, had we gone ahead and had MLS achieved its promised implementation, it might have had a very short shelf life.

So this is one area where delay might have been good. Is that right?

Mr. MEAD. Yes, the delay was in many ways, I think, good fortune.

At the same time, as the testimony on the state of the airline industry pointed out, that set of hearings you held, this is a very

clear opportunity for FAA to assist in a material way in the financial health of the industry.

Mr. CARR. Why don't you expand on that?

Mr. MEAD. Well, because this is not just a trust fund expenditure. In other words, if we make a misexpenditure here, it is not just a trust fund that gets hit up; it is general aviation and commercial aviation, because they are going to have to buy avionics packages. And those avionics packages are very expensive.

And so the airlines understandably want a system that is going to require the least cost and give them the greatest efficiencies. And that is why you often hear reservations raised about MLS.

Mr. CARR. Well, it was clear that there were serious problems with ILS when MLS was first proposed; and it was, given the state of ILS technology, quite a dramatic improvement. However, ILS improved, too. And now it is possible that satellites might leapfrog the whole thing, and perhaps MLS isn't as important as it once was.

What could you recommend, though, in terms of the status of the MLS program and what this committee ought to do with it? What should our funding commitment be—just to keep technology and the effort warm, waiting until that 1995-96 time frame when we could assess the alternative?

Mr. MEAD. Essentially, yes, and require the emphasis be placed on the development of the alternative systems. And that way you will have a good platform from which to make a coherent and informed decision in 1995 or 1996.

CONTROLLER STAFFING

Mr. CARR. Turning to controller staffing, your statement indicates that today the controller work force is within 1 percent of the need as estimated by FAA staffing standards. Since the average age of the controller work force is only 31 years of age, retirement and attrition apparently is generally very, very low at this point.

Does this indicate that the FAA would not be able to hire a large number of former PATCO controllers, even if the barriers to their reemployment were lifted?

Mr. MEAD. Yes, FAA simply doesn't have the need for a large number of controllers. I think they are planning to hire 300, each of the next two years.

Now, if you opt to rehire the fired controllers, perhaps some of them could fill those billets, but generally FAA doesn't have a need for additional controllers.

Mr. CARR. Is the FAA Academy at Oklahoma City currently turning out controllers?

Mr. JUDY. Very, very few, sir, at this point in time.

Mr. CARR. Just to keep it—

Mr. JUDY. Keep it going.

Mr. CARR. Keep it going, but there is very little demand for controllers even absent the fired PATCO controllers, so it would appear that the FAA is in a demand advantage situation.

Mr. MEAD. Absolutely. 25,000 applicants that are qualified they have waiting in the wings.

CONTRACT TOWER PROGRAM

Mr. CARR. The staff just reminded me that the General Accounting Office has suggested an expansion of the contract tower program. Might that be one area where the previous PATCO controllers could work?

Mr. MEAD. Yes. But the contract tower observation was intended to say this, that there are opportunities for savings in contracting out the level one towers. Congress has directed that some towers be established and contracted out, and that puts FAA in a position where they haven't been able to contract out some of the other towers for financial reasons. And that is all that remark was intended to convey.

Ms. KRUSLICKY. Mr. Chairman, if FAA were allowed to contract out the level one towers, they would really not be making the staffing decisions; that would be up to the contractor. Obviously, the company that wins the contract. So there might be an opportunity there, but it would not be an opportunity that FAA would directly influence.

CONTROLLER STAFFING STANDARDS

Mr. CARR. I understand. In 1990, the Committee directed the FAA to submit a detailed report on the adequacy of its controller staffing standards. We still don't have that study. Without those results, isn't there increased risk that the FAA does not maximize the efficient use of its operating resources?

Ms. KRUSLICKY. That is correct, Mr. Chairman. Without having accurate staffing standards, neither the Congress, this committee nor FAA can adequately determine where to place their staff. On the basis of discussions with FAA air traffic control officials, staffing standards as they currently exist do show an imbalance. The extent to which that imbalance can be corrected, FAA has not done that part of its analysis. That is why, we understand, you have not seen the report yet.

CONTRACT TOWERS

Mr. CARR. I don't mean to be bouncing around, but it just occurred to me that the FAA contracting out, as you pointed out, could save us some money in low-activity towers; perhaps an important medium step in the process, because, of course, I think the FAA would love to disestablish a number of towers where they are not needed. And yet they are put between a rock and a hard place with the local chamber of commerce and a whole host of other folks who seem to think that a control tower at their airport makes it a big league airport, and therefore, is something you can put on the local economic development brochure to try to attract industry and business there.

I would think the FAA would like that idea, get them off the political hot seat. But the FAA seems to be resistant to the idea of contracting out these towers. Do you know why?

Mr. MEAD. Well, we were getting a somewhat different perspective. From our discussions, FAA feels that Congress is the problem here—I might be stating that a little bit strongly—but in that Congress has specified that certain places will be contract towers. That

has handicapped their pool of contract towers, if you will, to contract out existing level one towers, rather than staff them with FAA controllers. And perhaps——

Mr. CARR. Well, maybe we ought to look at that. I mean, our information has been that they have been resistant, but maybe we ought to sit down and figure that out.

I mean, it is certainly not this Member of Congress. There may be other Members of Congress here who have insisted that they take money and use it inefficiently. I would like to end that here and now, if we can. I mean, if the FAA has contract opportunities that are being missed because Congress is causing them to waste their money, then let's stop that.

Mr. MEAD. I believe they have a hundred towers they would like to contract out. There are 900 controllers at those towers. So if you were looking for opportunities to reassign controllers to facilities that are out of balance, there is one potential opportunity. There are currently 27, 30 towers contracted out, 18 of which are congressionally designated.

Mr. JUDY. Just to add to what Mr. Mead said, Mr. Carr, officials at FAA with whom we have been speaking are fully behind the desire to contract out these towers. So it is not an FAA kind of issue.

Mr. CARR. Well, what do we get then? Do we get the 900 tower personnel contacting their congressman saying, I don't want to work for a private company, I have got all these years in at FAA and I don't want to work for a private company, nor do I want to move? Is that where the source of the problem is? Is it the 900 tower controllers that provide the resistance?

First—I can't believe, quite frankly, that there are Members of Congress who, number one, are sufficiently expert in this whole matter to, all by themselves, sitting in their House Office Building office, getting really ripping excited about this, and just forcing the FAA to do it one way or the other. It has to start at the grassroots out there someplace.

Is it the 900 controllers who just don't want to change or——

Mr. JUDY. I don't think so, sir, because a lot of these people, as part of their development, will go through a level one tower anyway, and then they will be moved to another facility to advance within the organization. So I don't believe it is coming from that level.

Mr. CARR. Well, where does it come from then? Speculate. I mean, Congress may be doing this, but it is Congress acting because somebody is requesting they do something.

Ms. KRUSLICKY. I think your comment earlier, Mr. Chairman, would be a good start for the speculation, that is, you have an airport, you want to feel like it is an important airport. One of the ways to make you feel it is an important airport is to have a tower. So I think there is some of that local pride, shall we say, that comes into those decisions.

Mr. MEAD. Now, I have been associated with the reviews of FAA for several years now. And there are always two sides to every coin. And I have seen cases where FAA has found it rather convenient to point to Congress as the reason why they are doing something. So there may be an element of that here, too.

I have seen cases where they have suggested to people that if you want a new radar, go up to the Congress and get them to designate it. We agree with you, but it would make it difficult for us to select this location for this radar and not other locations, too, so go get Congress to put it in.

And then later on, FAA may say, well, the only reason we did this was because Congress made us do it.

SAFETY INSPECTIONS

Mr. CARR. And then all kinds of writers out there talk about pork barrel, right, and it is always Congress that does the pork barrels, never the agencies.

Let's turn to safety inspections. One of your recent reports indicates that FAA does not effectively manage its inspection program. Apparently, they don't target their inspections to high-risk areas or rank inspections and inspection tasks according to a priority.

A couple of years ago both FRA and RSPA had similar problems and top-level attention there achieved significant improvements in a short amount of time. Yet your statement indicates that it will take FAA many years to develop a work measurement system and presumably many more for its implementation. Why?

I mean, is FAA not giving enough priority to this? Why is it going to take FAA so long? Have they got just a bigger problem, a bigger job, a bigger inspection force? Why can FRA and RSPA get it under way and not FAA?

Ms. KRUSLICKY. I think it would be incorrect to say, Mr. Chairman, that FAA has not taken any action over the last several years. They have recognized since the mid- to late-1980s that they have had problems with their inspection databases; they have tried to implement new systems to correct some of the old problems. Unfortunately, in doing that, they created additional problems. And they did move ahead to develop a system that would assess risks and therefore allow FAA to identify—to allocate its inspection resources to those high-risk areas.

A system such as that does not get created overnight. FAA has been working on it now for about two years and expects to have an operational model ready by next year, and hopefully, then to implement it in 1994 or 1995.

Mr. JUDY. 1995.

Ms. KRUSLICKY. 1995. So they are moving ahead.

I think it would be incorrect for us to say that they have not tried to address this problem. Unfortunately, the system is going to be taking a wealth of data, shall we say, to make the decisions that will be needed to target those high-risk areas. And in doing so, FAA must be very careful that the data that it is putting into that system are accurate. Otherwise, you get the old garbage in, garbage out. And we would prefer to see FAA be successful in this system, because we think it will go a long way to addressing some of its inspection problems.

Mr. MEAD. There is a clear analogy here to the AAS system, believe it or not. One of the difficulties with AAS was that, in the early years, they did not have air traffic controller support. In other words, the people that were going to have to be using it

really weren't necessarily part of all the decisions that were being made.

Here, Mr. Broderick's operation is going to need the buy-in of the inspectors in the field. It is the inspectors in the field that will be entering the data into this system about what they inspect and what they find, information that is critical to being able to target inspection.

So a major challenge for the FAA inspection program is to get inspector buy-in to this sometime early on. Otherwise, it will just be another system.

Mr. CARR. On a scale of one to ten, ten being the best, how would you rate their inspection program today?

Mr. MEAD. Give it about a five, six.

Mr. CARR. But you think we will get up an eight or nine in 1995?

Mr. MEAD. They are very much aware of the problems.

I would watch the foreign carrier area, Mr. Chairman. I believe that there will be a lot of activity in that area in the next couple of years. Third World, South American carriers coming into this country, the level of inspections that they receive, and the enforcement actions that are taken against those carriers when FAA finds something amiss, are potential problem areas.

Mr. CARR. In the inspection area, in terms of accountability and getting data, have they defined the data that they are seeking?

Mr. JUDY. Yes, sir, they have several databases that allow the inspectors to interpret their findings right on the spot, so when they finish an inspection they will come back; and given that they have the time—that is a problem that we have found in the past, that they don't enter the data as rapidly as they could. But they have those tools in front of them to be able to enter information very quickly.

Mr. CARR. This is perhaps a question for the FAA, but I will ask you as well. Are they contemplating the use of personal information systems such as the Apple "Newton" Federal Express, UPS and others use them. Their delivery people are already using the electronic note clipboard that makes it very easy, because they put data in right on the spot; and then when they get back to wherever their headquarters are, they just plug it in and it dumps the data right in, there is no data entry interface where some person is checking things off on a paper copy and then you go back to the office and the last thing you want to do is process all that data again just from the standpoint of putting it into a machine.

Is the FAA looking at that?

Mr. JUDY. To our knowledge, in our discussions with some of those people, yes, they are, sir. The extent to which they are going to do that and the type of systems they are going to procure, I'm not certain.

Mr. CARR. Well, it would seem that it would require a significant financial commitment to make that happen.

Mr. MEAD. Yes, I think that is one of the——

Mr. CARR. And we need to know about that.

Mr. MEAD. That is one of the issues. Actually, I would recommend that you and Mr. Wolf, if you have the time over the next two or three months, you can actually see, they have a PC, a 486 PC, where they upload information that their inspectors have en-

tered in their current database, and you can see different graphics and how one can use this to target inspections. I believe if you were to see this firsthand, you could see more clearly the direction that FAA is headed and have a better feel for it.

Right now, though, I believe it is just in the R&D stages and it is very important that issues, such as telecommunication links and how they are actually going to enter data into the system, be considered in the system design. Just as we were pointing out earlier when we were talking about the modernization program, the same set of issues.

Mr. CARR. Well, I think we will want to look into that, because—

Mr. MEAD. It is fascinating.

Mr. CARR. We hope to have a committee room of the future here pretty soon where maybe a modem would throw it up on a screen right in this Committee room, and we would see it; we don't have to go anywhere. Requiring a Member of Congress to schedule time to go someplace to learn something is frequently difficult.

MAINTENANCE TECHNICIANS

Mr. CARR. Let's talk about maintenance technician staffing for just a second.

As discussed in past years, FAA's staffing standards for maintenance and technical personnel have generally been inadequate. Have they made any progress in this area over the past year?

Mr. MEAD. Not that we can see. Our statement says we are concerned about the adequacies of the standards. A more precise and direct way of expressing our views is to say, we are puzzled.

The budget this year has come in asking for somewhat fewer maintenance technicians than they did last year. And yet their standards, even considering all the overtime and their contracting out of systems, says that they are 3,000 short. Any system that is telling you that you are that short does not appear to be believed by FAA or OST, because the budget doesn't reflect those numbers.

System reliability is quite high. The experience base of the maintenance technician work force is declining.

Mr. CARR. That was as a result of some retirements; they had a bit of a block obsolescence going on, didn't they?

Mr. MEAD. Frankly, I think this is an area that FAA should be directed by the Committee to report to you on, because with new modernization systems coming on line, the options of contracting out for maintenance, the issues of the number of retirements, the question of the staffing standards, this is going to be something that somebody is going to have to face.

ATC CONSOLIDATION

Mr. CARR. Well, I think asking them for a report is a fairly easy thing to do, and I am perfectly willing to do it. However, we asked for a report in 1990 on controller staffing, and we still don't have the report. I mean, asking for a report doesn't mean we get one—what do we have to do to get the report?

Mr. MEAD. That is beyond my pay grade. You could put it into law.

Mr. LI. Mr. Chairman, there is one event that is going to be happening in the next few years that has a direct bearing on the number of technicians, and that is the consolidation issue. As they announced last week, the limited consolidation plan will require them to keep a lot more facilities than they originally thought. That will translate into a lot more technicians that they will require.

Perhaps it might be appropriate for you to somehow link the decisions of consolidation and of AAS with some sort of articulation on how that will affect the technician work force.

ATC FACILITY CONSOLIDATION

Mr. CARR. Well, I might, on that comment, express my disappointment that the consolidation was only limited. I think that given the amount of capital investment that we have tried to make in this area, we could have been and the FAA should have been a lot more ambitious about their consolidation plans. And I fear that they didn't mainly because they were concerned with some short-term economic and political costs which are going to rob us of long-term savings that we could have had. And I think you have identified one of them.

That is one area where I am not entirely happy with the developments of the past couple of weeks, and hopefully, we can address that and make some improvements.

CONTRACT MAINTENANCE

Mr. CARR. Does the GAO have a position on the FAA's increased use of contract maintenance?

Mr. MEAD. We haven't reviewed the adequacy of it. We do know that it is increasing greatly. Just a couple of years ago, they had about six, seven of their systems contracted out. Now it is up to 15 and it is about to go to 27. So this is a growth area, and perhaps it is an area that we ought to include in our work plans.

Mr. CARR. Well, it is curious, because you have also said that they don't have good staffing standards. How do they evaluate the need for the contract maintenance?

Ms. KRUSLICKY. I think we have the same issue here that we had with controllers, Mr. Chairman; and that is, FAA needs to resolve the issue of its staffing standards.

We can sit here and speculate that two of the reasons why the maintenance technician staffing standards are so skewed, shall we say, is what level of experience do they assume when they are doing the staffing standards? Even with the retirements that FAA has had in the last few years, they are still showing an average 18-year experience level amongst technicians. If they use a much lower experience level when coming up with their staffing standards, that is going to raise the staffing standards.

The other thing is to look at the tasks that FAA assumes that maintenance technicians do as part of their work. Do they do some of these tasks concurrently or do they do them all sequentially? That will also have an impact on what the staffing standards say.

Somewhere there is a breakdown between the staffing standards and the number of people that FAA currently has to keep the

system at a 99.8 percent availability. But we think that they need to convince you that there is a need, they need to show again the issue that we had with modernization—you the data. Right now FAA does not have that data as far as the maintenance technicians are concerned.

Mr. MEAD. One thing is for sure, Mr. Chairman: You have here a much more productive work force than anybody thought.

AIRPORT IMPROVEMENT PROGRAM

Mr. CARR. Let's talk just a minute about the airport improvement program. Could you give us a little more information on your finding that the FAA neither has goals nor project performance measures for the AIP program?

Mr. MEAD. Bob?

Mr. LEVIN. Yes, Mr. Carr, we took a look at the airport planning process over at FAA and have looked at it both generally and as with regards to specific projects like the new Chicago airport, and have basically found an absence of any kind of measurable goals and any system that FAA would have in place to measure progress toward those nonexistent goals.

To give you an example: If FAA's goal is to reduce runway incursions by 20 percent, you would think they would measure runway incursions in different airports and have that system in place. Likewise, in terms of reducing delays, maybe weather-related delays by 10 percent, they would have airport improvement projects that, as they came in, they would try to understand to what extent those projects would contribute toward that overall goal and then have a measurement system to somehow show to what extent those projects help accomplish the goal.

So it is basically something that has not been done, needs to be done. And they tell us over at FAA that they are working on it, but I mean we haven't seen it happen. And it is hard to really know why. I don't think it is so much that the people don't have good intentions, but maybe there is some capacity-building that needs to be done over there.

Mr. CARR. Have you at all reviewed the adequacy of the FAA's criteria for awarding discretionary grants? And if so, what do you think of that process?

Mr. LEVIN. We haven't really looked at it very hard. We are just starting to do that work for Senate Appropriations; they have asked those kinds of questions.

Our initial sense, in the few reviews that we have done, is that FAA doesn't have any hard and fast criteria that do more than just say, "Trust us." They should show us exactly what we are getting out of this investment.

DEICING

Mr. CARR. And in a November 1992 audit, you expressed concern about the inadequacy of the FAA's regulations to prevent wing icing. Would you tell us your concerns?

Mr. MEAD. Go ahead.

Ms. KRUSLICKY. Basically what we found at that time, Mr. Chairman, was that although FAA had taken prompt action to respond

to the accident at LaGuardia in 1992, the regulations that FAA came out with to improve the deicing of aircraft did not include commuter aircraft, which, of course, take off and land more frequently than your large major carriers; that FAA at that time did not have a system to ensure that people who were to receive training did receive it and understand what they were supposed to do during the ensuing winter season.

Mr. MEAD. Yes, I might just amplify on that a bit. One problem was, after the deicing fluid's efficacy wears off, the question of what should you do? Since FAA had determined that it is not really effective to look out the window to see if there is ice, you have to do a visual check of the wing from outside the plane, we thought that once holdover time expires, that it would be prudent to require a visual outside-the-aircraft check. Either that or require the plane to return for deicing.

One major airline had established that procedure, so we thought that it was probably a prudent way to go.

Mr. CARR. Mr. Wolf.

GAO RECOMMENDATIONS

Mr. WOLF. I thank you, Mr. Chairman. Could GAO next year—since this is my first year as ranking member here, could GAO next year submit to the committee, or to me, a list or a summary of the recommendations that you have made and what the response was from the FAA at the end of this year? This will help us see what the FAA's disposition was? Could we do that?

Then I want to ask the FAA if they can do the same thing, if they can take the GAO's testimony and tell us the disposition from their point of view.

Could we do that next year?

Mr. MEAD. Yes, we will.

Mr. WOLF. It doesn't have to be a long document; it just has to be, specific, for example, on this there was no hearing, on this there was, etc.

Secondly, how does FAA and GAO get together on recommendations? I mean, obviously your testimony today was very comprehensive, very impressive. What do they do? Do you have a session where you all sit down and take a day or two to go through these? Or do you meet with the different associate administrators to say, here is what we are recommending, here is what we are doing? How do you do that?

Mr. MEAD. Well, obviously the input to the GAO testimony is a series of meetings during the year, and there are meetings during the year at very senior levels within FAA. And when it comes to the testimony, actually Mr. Del Balzo, Allen and myself sat down on Friday evening for about an hour, just chatted about things and in general about the points we were making in the statement and what their main points are at FAA.

I would say that lines of communications at FAA at the very senior levels have always been good, but again, not to become excessively redundant on your point about the administrator, it seems as though we get to know one administrator, establish a re-

lationship, get on the same wavelength, the new administrator gets educated and they are gone.

We try very hard to keep very high level contacts between FAA and GAO. And we have been pretty successful over the last four or five years.

Mr. WOLF. Has there been a formal check off, say, every three months or six months you get together and say, here is what we have said and what are you doing, or they get together and say, here is what we are doing? Is there any formal—

Mr. MEAD. No, not in that manner, sir, no.

Mr. WOLF. Would that not be helpful? Obviously they sit there and it is very difficult for the FAA, who, overall, does a very good job, to sit and listen to the critique of what they are doing.

So I appreciate how difficult it must be, but this is such a critical area with regard to safety and the future of the country, it would seem to me there ought to be some formal mechanism for the two of you, both in good faith, obviously, to get together to test things out.

Mr. MEAD. Why don't we act on that suggestion this year, that, say, four months from now, a new administrator might be confirmed and we will do just what you are suggesting, go over there and try to catalog what our outstanding items are, have a formal sit down and I will jot you a note.

Mr. WOLF. Okay, good.

Ms. KRUSLICKY. Mr. Wolf, you should also understand that every six months GAO has a practice of following up on the recommendations that have been made in our reports. As part of that process, FAA is contacted to see what they have done in the ensuing six months to act on various recommendations.

So although it is not a formal sit down with staff, there is an opportunity for FAA to update us on what it has done.

AIRPORT IMPROVEMENT PROGRAM

Mr. WOLF. Mr. Levin, you were talking about how the grants have been handled. The Chairman asked you about airport improvement grants.

Mr. LEVIN. Right.

Mr. WOLF. On what have the grants been based?

Mr. LEVIN. How were the decisions made on whether to fund something or not? FAA has a set of guidelines that they send out to the airport district offices, so when projects get proposed by the different airport sponsors, FAA puts them in some kind of priority order.

Safety projects typically are the highest priority. Large airports tend to have higher priority than very small GA airports, and capacity projects are also somewhat down the priority list. Basically they first check eligibility and then put projects in some kind of priority order. If the project doesn't make it in 1992, well, it may be near the top of the list in 1993.

Mr. WOLF. Mr. Chairman, I want to commend you for very, very thorough hearings; the hearings are about as thorough as they could be. It may not be a bad idea, particularly in this technical area, to someday get the GAO and FAA together sitting at the

same table so that when a question is asked by the Chairman or another Member about a particular problem, FAA is able to immediately explain. I think if you had the FAA and GAO together, not like a courtroom, but an environment where there is an opportunity for a rebuttal or an explanation. Some of the reasons for not acting might be very basic and understandable.

I don't know whether the committee would have time, but I think especially for the FAA, it might be helpful. Mr. Mead and members of the GAO team, I appreciate your testimony.

Thank you, Mr. Chairman.

IMPACT OF FAA BUDGET REDUCTIONS

Mr. CARR. As I said in my opening remarks, the President has endorsed a budget resolution which assumes certain numbers for transportation, including the FAA. Then a few weeks later, the President proposed that we spend \$3.6 billion more than the budget resolution assumed.

So we are hard pressed to know what the President really wants in this area, and unless we get some advice from the President on what he really wants, this Committee will have to resolve that conflict.

The President wants the surface transportation modes fully funded and that means we will have to find \$3.6 billion of savings somewhere else. What do you think the impact would be if we cut the FAA operating budget by \$1 billion?

Mr. MEAD. I think it would be very serious. Of course the response to your question has to be contextual depending on where do you take the cut, but I think overall it would be very serious.

The modernization program, for example, is at a stage where a lot of the bills are coming due, and this next year there are three or four systems that are due to be fielded and I think it is very important that that go forward. It would probably impact on safety if cuts were taken out of the inspection work force, controllers.

The impact of massive cuts in the AIP program would not become immediately apparent in terms of impact on the aviation system because these are for projects that are to start. System maintenance would be adversely affected. I can't imagine the impact—I can't imagine FAA being able to safely absorb the impact of a \$1 billion hit.

That is not to say that their budget can't be cut, but there are places in that budget where it can be, but \$1 billion is a very substantial piece of change.

Mr. LI. Mr. Chairman, regarding cutting the work force, especially when we are talking about controllers. If we cut operations and looked at reducing salaries, that would probably translate to their having to impose even more strict controls on traffic, increased use of central flow.

What that would translate into is probably a greater impact on the airline industry than \$1 billion in terms of their direct operating costs, including fuel. So that \$1 billion cut in FAA would probably have a tremendous impact on the rest of the industry.

Mr. CARR. Well, I thank you for your answer. I think we need to know from the White House what it is they intend. Are we going to

fully fund ISTEA, transit, or are we going to maintain the FAA, with perhaps a reduced level of funding for ISTEA and transit? Unless someone waves a magic wand and we get more funding in this Committee, we won't have the dollars to do what the President has proposed.

Mr. MEAD. May I amplify my response and one particular? The aviation system differs from a lot of these other systems in that the Federal Government has taken unto itself the responsibility for managing for the Nation the air traffic control system.

We have taken unto ourselves to have the responsibility for modernizing the air traffic control system, and with that comes certain implications of responsibility and expectations, and it is not as though the traveling public can look to somebody else to administer the air traffic control system while they are trying to absorb a budgetary hit in the magnitudes of \$1 billion.

So I agree with you. I know you have some very difficult decisions to make this next year.

Mr. CARR. Thank you, Mr. Mead, and all of your colleagues. We really appreciate the time and attention you give to this Committee's responsibilities and you help us tremendously. We always learn a lot when you are here, and with that, I will excuse you as a witness.

Before calling our able acting administrator and his staff to the table, we are going to take a short 10 minute recess.

[Recess.]

MONDAY, APRIL 26, 1993.

FEDERAL AVIATION ADMINISTRATION

WITNESSES

JOE DEL BALZO, ADMINISTRATOR (ACTING)

MONTE BELGER, DEPUTY ADMINISTRATOR (ACTING)

JOHN BURT, EXECUTIVE DIRECTOR FOR SYSTEM DEVELOPMENT

DARLENE FREEMAN, EXECUTIVE DIRECTOR FOR ACQUISITION AND SAFETY OVERSIGHT (ACTING), ASSOCIATE ADMINISTRATOR FOR AVIATION SAFETY

NICHOLAS STOER, ASSISTANT ADMINISTRATOR FOR BUDGET AND ACCOUNTING

ORLO STEELE, ASSISTANT ADMINISTRATOR FOR CIVIL AVIATION SECURITY

HERBERT McLURE, ASSISTANT ADMINISTRATOR FOR HUMAN RESOURCE MANAGEMENT

THERON GRAY, ASSISTANT ADMINISTRATOR FOR INFORMATION TECHNOLOGY

DALE McDANIEL, ASSISTANT ADMINISTRATOR FOR POLICY, PLANNING & INTERNATIONAL AVIATION (ACTING)

QUENTIN TAYLOR, ASSISTANT ADMINISTRATOR FOR AIRPORTS (ACTING)

ARNOLD AQUILANO, ASSOCIATE ADMINISTRATOR FOR AIRWAY FACILITIES

WILLIAM POLLARD, ASSOCIATE ADMINISTRATOR FOR AIR TRAFFIC

ANTHONY BRODERICK, ASSOCIATE ADMINISTRATOR FOR REGULATION AND CERTIFICATION

JOHN TURNER, ASSOCIATE ADMINISTRATOR FOR NAS DEVELOPMENT
GARLAND CASTLEBERRY, ASSOCIATE ADMINISTRATOR FOR AVIATION STANDARDS

MARTIN POZESKY, ASSOCIATE ADMINISTRATOR FOR SYSTEM ENGINEERING AND DEVELOPMENT

JOHN CASSADY, CHIEF COUNSEL (ACTING)

RUTH A. LEVERENZ, DIRECTOR OF BUDGET

FAA OPENING REMARKS

Mr. CARR. We will reconvene now and I want to welcome to the Committee Mr. Joe Del Balzo, the acting FAA Administrator. It is nice to have you with us again. You were with us last week and provided us with helpful information. I might point out that from my standpoint, Mr. Del Balzo has been doing a great job of shepherding this institution known as the FAA through the interregnum between administrators. That is not an easy job, but he is obviously up to it, a career civil servant, having had many major responsibilities inside the FAA, and a pilot and someone who knows the system from the user point of view, a person who has been given many awards and honors. I can't think of a better person to

have the FAA entrusted to between administrators than Joe Del Balzo.

So welcome, once again to the Committee. I am going to have you introduce your staff. Your statement will be put in the record in full and I would ask you to summarize the high points.

FAA OPENING STATEMENT

Mr. DEL BALZO. Mr. Chairman, thank you. Let me introduce the FAA team that is with us today, starting on your right, Mr. Pollard. Mr. Pollard is the Associate Administrator for Air Traffic, Mr. Broderick, Associate Administrator for Regulation and Certification, and Mrs. Leverenz, Director of Budget.

On my right is Mr. Belger, the Acting Deputy Administrator, Mr. Taylor, Acting Assistant Administrator for Airports, and Mr. McDaniel, who is the Acting Assistant Administrator for Policy and International Affairs.

Mr. Chairman, it goes without saying that we recognize the enormously difficult job this committee has in trying to balance between all transportation modes. You made it clear this morning how much more difficult the task has actually become. It makes us realize that we have to start looking at FAA at doing business differently to survive in the present economy.

And within FAA there are today several high level teams looking at this very issue. The work will take time, but there is no question that we need a new vision of how we will do business in the second half of the decade. That includes things that we were talking about this morning, better, more quantitative mission needs statements, the ability to do a better job of risk mitigation, the having of more solid investment criteria, as you have talked about, the need for better cost containment, schedule integrity and paying more attention to benefits and costs than we ever have in the past.

SYSTEM PERFORMANCE

Today and on any typical day, the FAA will handle just under 200,000 aircraft operations. We will perform 800 safety inspections, just under 90 security inspections, 14 safety seminars. Our fiscal year 1994 budget request supports the continued provision of these services to produce and steadily increase the safe and efficient air travel.

The good news is, year after year the system gets better and better. And this record is the achievement of FAA workers whose professionalism and productivity are unsurpassed in the world of aviation, and of equal quality are the complex electronic systems that are so critical to modern air traffic control.

The Congress, this committee, have made a very substantial investment in both the FAA work force and in our advanced technology. The investment is a necessary one and I believe it has been managed with prudence, foresight and imagination. And the budget that we present to you for fiscal year 1994 represents our best thinking and planning about how we can continue to fulfill our responsibilities over the next several months.

But traditionally the Administrator's opening statement is simply a brief recitation of the major items that we are requesting. I will give you some highlights of major accomplishments in the last 12 months. But when I think about it, these budgets are based on a Capital Investment Plan, a R&D plan, an airport reauthorization and plans that we have made for the allocation of airport grants. The trouble is, every time that FAA tries to describe individual line item requests, as you ask questions about each one of them, I think we always fail to take a moment to describe how the individual pieces of the budget fit into a broad plan, where we are going, what it is intended to accomplish.

What I wanted to do in a few minutes this morning is, one, describe how far we have come in the NAS Plan and the CIP, where we are today, where we are going, and how the pieces of this budget, the fiscal year 1994 budget, fit into an overall plan. And to do that, we need to put the scale of our air traffic system into perspective.

In the United States we have 21 of the top 25 busiest airports in the world. We handle just under 2,000 take offs and landings daily. Since 1980, traffic has grown, will continue to grow. During the balance of the 1990's, international traffic will grow even more, and the air traffic tools that this committee helps to fund without question are the finest in the world. They handle the toughest air traffic control challenges in the world and we shouldn't be complacent about what we have achieved and we shouldn't take for granted what the system delivers.

During the 1980s the widespread deployment of low level wind shear sensors, expanded ILS systems, replacement of the Host computers, steady improvement and better and more reliable air to ground transceivers have all helped us put in place a system that is much more efficient and effective than it was in 1982 and much better than if we hadn't made those investments.

FUTURE GOALS

The real question today is, what about tomorrow? What about the future? That is what our capital investment budget is all about. We are not satisfied that today more than 23 airports have more than 20,000 hours of aircraft delay. It costs the airlines a fortune in fuel, crew costs, reschedulings, and passengers don't need to suffer those delays. One of the themes of our investments is to introduce technology as quick as we can that enables capacity and efficiency that cannot only improve upon where we are today but can improve and meet projected growth with increased efficiency.

We have some very specific and ambitious goals. Let me tell you what some of them are. GAO mentioned one or two of them this morning.

We have a goal to reduce the civil aviation fatality rate by at least 10 percent by the year 2000, reduce the number of accidents attributable to weather by 20 percent by 2000, reduce weather related delays by 15 percent, ensure that system capacity will meet demand, provide more user preferred routes at altitudes to minimize aircraft operating costs, reduce airport runway incursions by

80 percent, and accommodate a projected twofold increase in demand by 2010 in the oceanic demand with fuel efficient routes.

This is the first time we have ever committed ourselves to achieving what I believe are very ambitious goals.

FY 1994 REQUEST AND GOALS

When we look at our fiscal year 1994 request, I will tell you what our top goals and priorities are: maintaining and improving safety for the operation of new and existing facilities. The reality is we are now seeing massive numbers of new equipment that we purchased with F&E funds during the 1980s and 1990s.

We have got to find a way to fund the associated maintenance, telecommunications, training, spare parts and the transitional staffing costs associated with these investments. No question that we have to meet industry changes in growth and user demands. We have to find a way to reverse erosion of our operations base.

And based on what you said this morning, that is going to be very difficult.

We need to reassess and improve credibility in our capital modernization program. As you know, we have all spent a lot of personal energy in reviewing the whole AAS and consolidation programs.

Our last priority is in the research, engineering and development area. Priorities continue to force new and innovative improvements in meeting the challenge of tomorrow's growing demands on the aviation system.

And for anyone trying to grasp the basics of how the National Airspace System works, I don't believe that our budget submission is the best place to start. The S in that stands for system and not a spreadsheet. The complex inter-connections among all the mass components can't be shelled in static columns of numbers because we miss seeing the way the system manages the flow of information which is crucial to the air traffic control process.

A TYPICAL FLIGHT IN THE YEAR 2000

So for the next couple of minutes, no more than three, I would like you to visualize a typical flight by a commercial carrier seven years from today. And I would like to describe what it will be like to fly in the system as new technology from our Capital Investment Plan gets put into place.

It starts with the preflight. It is a route briefing that takes into account aircraft performance characteristics, climb, cruise and descent, weather forecasts for the proposed departure time, considers special use airspace, equipment outages, special events. The output is route specific data in both pictorial and text form that gives the pilot everything he needs to execute the flight.

With the implementation of a real time weather processor, the integrated terminal weather system, and the aviation products weather generator in the 1994 budget, the ATC system will have a much higher weather capability and the productivity systems will be available to the aircraft flyer for data link.

Another major improvement is the implementation of the Operational Data Management System, ODMS in the 1994 budget, all designed to provide users with more automated data with much

higher levels of reliability than they have ever had. The traffic management processor provides all of the necessary information for preparing the flight routes, departure instructions and clearances. Now you are ready for take off.

The ground movement of aircraft on the surface will now be done by another automation program, the Airport Surface Traffic Automation System. You will find that in the 1994 budget.

And finally, the aircraft is airborne. Terminal and En Route operations have begun, funnelling into what can be described as surveillance control, all done as a result of the Advanced Automation System. Automation enhancements by the year 2000 include: TATCA, Terminal Automation Control, most of the advanced AAS, including initial Advanced En Route Automation (AERA) services. TATCA factors in maximum runway utilization rates, aircraft performance characteristics, traffic management, advisory planning tool, descent adviser and finally the final approach spacing tool.

AAS has been implemented for five years to the point where it is now fully in place. Initially the Area Control Computer Complex (ACCC) introduced running TAAS on the Initial Sector Suite System (ISSS). And when you look at everything that happens on that flight from preflight to touch down, it all comes about as the result of the capital investment program that we are putting in place. When you think about that future flight in the year 2000, it won't be possible without two crucial elements.

The first is consistent funding, beginning in fiscal year 1994 through the year 2000. I believe that is a challenge for this committee. The second is the timely implementation of CIP technology, clearly a challenge for FAA. Both of those are critical if we are to deal effectively with the future demands for air traffic control services.

Both are essential if we are to fully realize the growth potential of the aviation sector of our economy, and both are imperative if we are to successfully preserve the high standards of safety which today we take for granted. I believe that fiscal year 1994 is the most critical year in our modernization program that we have ever faced.

Mr. Chairman, that concludes my statement. I will be pleased to answer any questions that the committee may have.

Mr. CARR. Thank you very much, Mr. Del Balzo.

[The prepared statement of Joseph Del Balzo follows:]

Statement of Joseph M. Del Balzo
Acting Administrator
Federal Aviation Administration
Before the House Committee on Appropriation,
Subcommittee on Transportation
April 26, 1993

Mr. Chairman, I appreciate the opportunity to appear on behalf of the Federal Aviation Administration (FAA) to present our budget for Fiscal Year 1994. I want to thank you and the other members of this committee for your continued support for and interest in FAA's activities and programs.

The President's budget requests a total of \$9.2 billion in budget and obligation authority for the FAA...a 3.5 percent increase over our FY 1993 enacted level. It presents a balanced program of funding to provide for the safe and efficient operation of the National Airspace System (NAS), enhances the capacity of the nation's existing airports and available airspace, maintains U.S. competitiveness in the world aviation market, and assesses the impact of aviation on the environment. The small increase we are requesting recognizes that the FAA must do its share to slow the growth in Federal spending and control the deficit.

The complex inter-connections among all the NAS components and how our controllers use our new equipment do not come across well in static columns of numbers or in individual line items of a budget. I believe that I can help better defend the many elements of our budget for you by briefly describing the way the

system uses our new equipment to manage the continuous flow of information which is crucial to the air traffic control process.

I would like to begin with a brief comment about the FAA workforce. On a typical day, the FAA will handle 168,000 aircraft operations and provide over 110,000 flight services to general aviation pilots. We will perform 800 safety inspections, 82 security inspections, and 14 safety seminars. To guarantee the high level of performance and reliability that are demanded in the U.S. air transportation system, airway systems specialists will maintain and monitor an infrastructure consisting of some 28,000 hardware and software systems.

There are few workforces anywhere in the federal government who carry a greater day-to-day responsibility than do the men and women of the FAA. They have set demanding standards of professionalism, which are unsurpassed anywhere in the world of aviation. Of equal quality are the complex electronic systems, which are critical to modern air traffic control. The Congress and the American people have made a very substantial investment in both the FAA workforce and in our advanced technology. This investment was a necessary one, and I believe that it has been managed with prudence, foresight, and imagination. But we cannot be complacent about what we have achieved, nor should we take for granted what the system delivers.

The United States air transportation system is the busiest and most complex in the world--we have 21 of the 25 busiest airports in the world. At its heart is a vast network of airports and sophisticated air traffic control, navigation, surveillance, and communication equipment that are constantly evolving to meet the needs of a dynamic industry. As this Subcommittee knows all too well, the airline operators have been hit by the worst financial losses in history. U.S. aircraft and avionics industries are facing stronger competition from foreign companies than ever before. After nine decades as the undisputed leader in world aviation, many now fear that the United States could lose its leadership position.

A safe and efficient national airspace system, capable of meeting the demand for air service, is fundamental to the economic stability of the airlines and the aviation industry. Our latest aviation forecasts predict that, over the next decade, the number of passengers using U.S. commercial air services will increase from an average of 1.3 million a day to nearly 2 million. We further predict that a 25 percent increase in air carrier operations will be needed to meet this demand. Today, the top 100 of the nation's busiest airports account for 95 percent of all air carrier passengers and 92 percent of all air carrier operations. Such concentration leads inevitably to delays. The problem lies in the limited capacity of airports to accommodate aircraft on the ground, the limited capacity of the air traffic

management system to accommodate aircraft in the air, and the difficulties in integrating the two. Compounding the problem is mounting public concern over noise, congestion, and pollution created by urban airports.

One way that the FAA and this Subcommittee can help the airlines, for now and the future, is by investing in infrastructure improvements to increase capacity and reduce operating costs. We simply have to move quickly to meet the demands of the 1990's and to prepare for a new era of air transportation in the coming century. The FAA's Capital Investment Plan is intended to do just that. This plan, along with our Research and Development (R&D) program, introduces new technologies that are either available now or could be deployed in the near future to cut the cost of flying for all users of the airspace.

Many of these savings will accrue from new capabilities which will permit flexible and dynamic modifications to aircraft routes in response to changes in weather or traffic conditions. An adjunct to the Advanced Automation System, called Automated En Route Air Traffic Control, will provide automatic reconfiguration of blocks of managed airspace to better meet real-time user demand and permit increased granting of user-preferred trajectories and altitudes. The Traffic Management System incorporates better prediction and modeling techniques with tools for air traffic managers that will help minimize

delays and other adverse impacts of congestion. User preferred routes at high altitudes are currently being provided to a limited number of aircraft between designated city pairs or on individual flight requests.

When fully implemented, air carriers are estimated to save over 35 billion gallons of fuel and over 30 million aircraft hours. These direct operating cost savings equate to over \$62 billion through the year 2025, or on average nearly \$2 billion annually.

For flights over the ocean, programs such as Data Link and Automatic Dependent Surveillance provide the means for immediate electronic communication of accurate position reports between pilot and controller instead of voice relay and manual key-entry of position data that exists today. Combined with new automation programs such as Dynamic Oceanic Tracking System, these programs will provide greater capacity and more fuel-efficient routes over the oceans than today's technology allows.

The FAA is pursuing an aggressive research program to make digital data link available for every facet of flight and for all users of the airspace. Data link opens the way for transmitting a host of new information to and from aircraft that will significantly alter the way air traffic is managed...from pre-departure through landing, dramatically improving capacity, productivity, and efficiency.

In its simplest form, data link will replace or augment many of today's routine voice messages with non-voice digital communications. In a later, more complex form, data link will become part of a vast, interlocking system of computers, satellites, sensors, and software called the Aeronautical Telecommunications Network or ATN. The purpose of ATN is to integrate automation systems on the ground with computers in the aircraft.

Another project, Terminal Air Traffic Control Automation (TATCA), is expected to decrease delays by increasing arrival capacities. TATCA provides advisories directly to controllers to assist them in optimizing traffic flow in terminal areas.

We are also aggressively pursuing R&D programs that are aimed at reducing runway incursions at the busiest airports. These programs combine radar technology with a series of incrementally more sophisticated automation capabilities (Airport Movement Area Safety System and Aircraft Surface Traffic Automation) to achieve a dramatic reduction in runway incursions. Projects such as these will ensure that growth in aviation demand is met without compromising safety.

If the U.S. aviation industry is to maintain its world leadership position, it must be on the leading edge of technology. One such

advancement with revolutionary implications for air traffic control, is satellite technology. The use of the Global Positioning System, combined with advancements in telecommunications and small, powerful computers, offers us virtually unlimited opportunities for improvements in safety, capacity, service flexibility, and operating efficiency. We cannot afford, as an agency, to miss this opportunity to better fulfill our public mandate. We cannot afford, as a country, to lose out in the competition for the vast worldwide market in satellite technology. And we must not, as the world's leader in aviation, miss this chance to continue to assert our technological leadership.

Perhaps no other issue so compels us to take a global perspective than does our common concern with the environmental impact of aviation. It is essential that we accurately assess aviation's impact, and then identify a reasonable and responsible course of action to address it. We are requesting funds to address this issue on two fronts: the first is to continue studies aimed at reducing aircraft noise and engine emissions; the second is energy conservation.

Our FY 1994 budget also requests funds to ensure that the FAA complies with all laws and regulations regarding hazardous materials to ensure that those materials used in air traffic control equipment and facilities are disposed of safely and

properly, and do not harm our environment.

Here, briefly are the highlights of our budget submission:

Highlights of the FAA Budget for FY 1994

Facilities and Equipment (F&E)

To support projects that modernize and improve the National Airspace System (NAS), \$2.524 billion is requested for the F&E program in FY 1994. The FY 1994 F&E request a 7.4 percent increase over the FY 1993 enacted funding. The budget supports implementation of the Capital Investment Plan to provide new facilities with modern equipment capable of handling the volume of air traffic predicted for the 1990's and beyond. It represents the financial commitment necessary to achieve the cost-saving benefits so important to our system users.

Operations Funding

The FAA request for Operations places continued emphasis on safety, security, and efficiency of the National Airspace System. For Fiscal Year 1994, the Operations appropriation requests \$4.576 billion. This is an increase of 0.8 percent or \$38 million over the FY 1993 level.

This request supports the day-to-day resources necessary to maintain the facilities and support the men and women responsible for keeping our system operating. In line with the President's

Economic Plan, we have carefully targeted some reductions in our workforces and in our administrative spending. Despite these reductions, we believe our request includes sufficient resources to support the current operating level of the NAS.

As part of our Operations appropriations request, we also recommend certain cost-cutting measures such as early termination of the Pay Demonstration project and discontinuance of the subsidy for the Direct User Access Terminal (DUAT) service. The Pay Demonstration project was scheduled to end in June 1994, but will now end 9 months early in September 1993. Our demonstration to entice pilots to use the DUAT service for weather briefing and flight plan filing has served its introductory purposes. Similar commercial on-line services exist and the toll free 800 service will be retained.

These reductions will help defray increased expenses associated with inflation, non-discretionary pay increases, and other mandatory costs of operating and maintaining new systems, particularly expenses associated with the provision of maintenance and supply support to new systems that were fielded and commissioned in previous years.

Research, Engineering, and Development (R,E&D)

Our FY 1994 request for the R,E&D appropriation is \$250 million, an 8.7 percent increase over the FY 1993 enacted level. It funds

the development work of many of the projects which I have just described. We will continue to work aggressively on joint ventures with industry, other government agencies, and the international community on the development and implementation of new air traffic control system capabilities.

Among the major efforts in the R,E&D program are system capacity, satellite navigation, advanced air traffic control technology, aging aircraft, automation enhancements, airport security, and a strengthened focus on human factors. A vigorous R,E&D program is critical to conceiving and developing new technologies that will provide the foundation for further improvements in safety and efficiency in our air transportation system.

Grants-in-Aid for Airports

An obligation limitation of \$1.879 billion is requested for the Grants-in-Aid for Airports. This amount is a 4 percent increase over the FY 1993 level of \$1.8 billion and recognizes the continued need for investment in our nation's airport infrastructure. Reauthorization legislation for Airport Grants is required for FY 1994 and will be forwarded shortly.

Trust Fund Issues

Funding levels in FY 1994 assume 75 percent trust fund financing for the FAA programs.

Before I close I would like to reaffirm the importance we place on the timely completion of the Advanced Automation System (AAS). When I appeared before this Subcommittee one week ago, I outlined the steps that we have taken to change the way we manage the AAS program. These steps reflect our commitment at the top levels of the FAA to keep the AAS on budget and on schedule. I cannot overemphasize the importance of this program to our overall modernization plans. The Interim Sector Suite System is needed to replace 25 year old equipment and to provide the means for introducing new software features. The Terminal Advanced Automation System is critical to allowing us to introducing new delay-reducing methodologies in the terminal airspace environment. The reforms we have put in place reflect this commitment and I ask for your continued support.

This concludes my statement, Mr. Chairman. I will be happy to answer any questions you or other members of the subcommittee may have at this time.

AIRPORT IMPROVEMENT GRANTS INVESTMENT CRITERIA

Mr. CARR. It is indeed a time of great change and challenge and part of that challenge is the scarcity of capital resources for investment and as you and I have discussed personally, this Member of Congress, and this Committee, are working toward developing methodologies to enable us to allocate our scarce funds more effectively.

We are taking the attitude that this is an investment program and we ought to act with investment grade standards, seeking information about economic rate of return so that we can guarantee to the taxpayers that we are trying to marshal our resources in their most effective way for the entire benefit of the economy.

A needed first step is the development of sound criteria for evaluating investment options. The need for such criteria is no more evident than in the FAA's airport improvement program (AIP). You and I had a brief discussion on the phone and later there was a briefing from the FAA on the subject here in this room and I must confess that it left me believing that the FAA just basically doles out the money without much thought about cost benefit ratios or economic rates of return.

In your opinion, is the FAA's process for evaluating and awarding discretionary AIP grants adequate?

Mr. DEL BALZO. I think our process for the awarding of discretionary money can be much better than it is today. I think it can be much more quantitative than it is today. I would agree with you on the need for investment criteria that gives us the ability to prioritize our investments based on the maximum rate of return.

I think that is something that we can phase in beginning in fiscal year 1993.

If you look at how we evaluate capacity projects today, I think it becomes very easy for us to be able to evaluate the capacity impact of a particular project at a particular airport. I think there are enough models in place that allow us to do that.

Based on some modeling development work that we have been doing over the past couple of years, there is a model called the National Airspace System Performance Analysis Capability (NASPAC) that gives us the ability to trade off capacity benefits between individual airports and allow us to make an evaluation of system impacts of each of those particular projects.

I believe that we can start that in fiscal year 1993. I think we can be in a better position to be much more global in the use of investment criteria in fiscal year 1994. But to develop that investment criteria, I don't think is easy. I think it is a complex thing. I think it needs to be done with the users. I think it needs to be done with the airport operators. I think it needs to be done with the users of the airport, air carriers.

What I would suggest that we think about is through one of the existing advisory committees, working with the user community over the next maybe two to three months to see how far we can come in developing much more comprehensive investment criteria in the AIP program for all discretionary projects.

NEED FOR INVESTMENT CRITERIA

Mr. CARR. Well, I would encourage you to do so. We are doing it and we are going to begin measuring performance, and we are going to begin to assign economic rates of return to various investments and to things that the agency does.

We will be glad to work with you in terms of what we have learned. It is not necessarily easy, as you point out, and it is not a necessarily well-developed discipline. Making economic rate of return analysis in the private sector is a little bit easier, you have a bottom line against which you can measure things.

But we ask government all those things to be done that don't make money and as a result, our measurements are of a different nature, but there are a number of people throughout the country who have, over the past several years, been attempting this and I think they have made a first cut, a second cut, a third cut.

I think that the methodology is beginning to mature and it should be implemented by the FAA. I know that the FAA has criteria for control towers. There are some areas of the FAA where this is being done already.

Mr. DEL BALZO. The notion of investment criteria extends beyond the Airport Improvement Program and extends into the capital investment program as well. We do a better job in the capital investment program. Again, we have the ability to evaluate the impact of a particular ILS at a particular airport.

What we don't have is the ability to do the trade-off between purchasing four ILS's in 1994 and five radars, maybe four ASDE-3's, and purchasing no ILS's and six ASDE's. We don't have the ability in the F&E program to do that kind of system trade-off analysis.

Mr. CARR. As I understand it, cost benefit studies or rates of return analysis are not conducted on AIP projects at this time.

Mr. DEL BALZO. No, they are not, that is true.

Mr. CARR. What role do your regional offices play in the evaluation of AIP funding from specific airport authorities?

Mr. DEL BALZO. Regional offices, the airport divisions in each of our regions, have field offices that are dealing with the airport dollars on a daily basis. They will make recommendations based upon particular needs at the airport and among airports within their region which they will submit to Washington for further evaluation.

Those evaluations are done by the organization that Quentin Taylor heads up and I would ask Quentin to expand on what happens in that process.

Mr. CARR. Mr. Taylor.

Mr. TAYLOR. Thank you. There are regional organizations that do perform as externals to Washington, particularly in terms of abiding by policy that is developed in Washington. They abide by guidance material which prescribes orders of priorities in which we would satisfy airport development work.

They do not make recommendations based upon their visceral sense as to airport need, but they do make airport development decisions based upon a need as our policy guidelines would spell it out in terms of passenger service, thinking in terms of the use of

enplanement dollars, delay factors, thinking in terms of those airports which are approaching or exceeding 20,000 hours of delay.

They do make decisions in terms of recommendations regarding keeping our national airport system up to snuff, so to speak, in terms of the safety aspects as well as the general integrity of the airport. Mr. Del Balzo is exactly right. Each one of their recommendations does find its way to Washington.

We examine the airport project's prospects in terms of many of those guidelines or indicators that I just mentioned and finally we approve those projects here in Washington.

IMPACT OF A REDUCTION IN OPERATIONS FUNDING

Mr. CARR. Mr. Del Balzo, you heard the question that I have propounded to Ken Mead of the General Accounting Office with regard to the dilemma this Committee finds itself in this year. The President having endorsed a budget resolution which assumes a transportation figure, and then the President proposing in his April 8th, I believe it was, budget request a total budget for transportation, which including his investment package, is \$3.6 billion over what the budget assumes for this Committee to work with.

In the FAA there is only one area where there is significant first year outlays in one year and that is operations, which outlays at a rate of about 80 percent, I believe. If we were to accede to the President's request to fully fund ISTEA, the highways, and we had to cut the FAA by at least \$1 billion to accomplish that, could you give me your impression—I know that you haven't had a lot of time to study it, but could you find out or tell me what, if this Committee cut your operating budget by \$1 billion to meet the President's request for highway funding, what would that mean to the FAA?

Mr. DEL BALZO. Mr. Chairman, I believe that a funding cut anywhere close to \$1 billion in our operations account would be more devastating than the air traffic controllers' strike of 1981 and one that we would not recover from as easily.

One billion dollars in an appropriation that is mostly payroll, payroll for operational people, equates to anywhere from 10,000 to 13,000 people, or every person in the operations appropriation being furloughed for up to 93 days. We would not recover as easily as we did from that devastating strike of 1981. Much more—much more devastating.

Mr. CARR. People would have to be furloughed for 93 days?

Mr. DEL BALZO. We have a choice. We can either fire 13,000 people or we can furlough every person, including air traffic controllers and safety inspectors for 93 days. That is the alternative.

Mr. CARR. So what would be the impact on the air traffic controllers alone? If you didn't have air traffic control from, say, midnight until 7:00 in the morning anywhere in America, would you save \$1 billion?

Mr. DEL BALZO. You would wind up saving \$1 billion if somehow we could equate that to 13,000 person years that have been saved. You would save that \$1 billion.

The good news is that operational errors would probably come down dramatically. The bad news is nothing would be moving.

Mr. CARR. The current budget proposal allows for less than 1 percent growth in operations and that is not enough to cover planned increases in health benefits and other costs. So even if we agree to your request for a 1 percent increase, you are, in constant dollars, taking a bit of a cut as it is in the request.

Mr. DEL BALZO. The current budget request for the operations appropriation I believe is the tightest budget request that we have ever submitted, and in submitting our budget request, I think you know that we have done a lot of belt tightening.

We have proposed to do away with and defer things that we would not ordinarily have proposed. I believe the next cut in the operations appropriation results in some Draconian measures on our part involving people. We have always protected our safety work force. We have protected the safety work force in our budget submission this year. Another cut in that appropriation will involve people.

Mr. CARR. Well, given that you are going to have to cut, how are you going to meet the budget with only a 1 percent increase in operations?

Mr. DEL BALZO. I think we have done a lot of belt tightening. We have proposed, for example, to terminate the pay demonstration program earlier than we had anticipated, nine months earlier. We are proposing to discontinue the subsidy for a service that we currently subsidize for general aviation. It is called DUAT, Direct User Access Terminal.

We have cut back on administrative travel. We are cutting back on administrative overhead. I believe that we have done all of the right things in the operations appropriation. I think it is a tight budget but I think it is doable.

PAY DEMONSTRATION PROJECT

Mr. CARR. You mentioned the pay demonstration proposal, Mr. Del Balzo. How much money does the pay demonstration project save?

Mr. DEL BALZO. Pay demonstration program runs us \$20 million a year. It was a demonstration program that was put into place a little over four years ago; it is a five-year program.

It was geared for those facilities that we found hard to staff, high cost of living areas where it was hard to recruit people, and secondly, where it was hard for us to retain qualified people.

We have had some marginal success with the pay demonstration program. The percentage of full performance level controllers at each one of these facilities is higher now than it was before we started the program. The numbers of people that we have, and the experience level of the people that are there are higher than they were before the program.

I believe that based on the other things that have happened since the pay demonstration program went into effect, it has outlived its usefulness for us. In all but one of the localities, there is an 8 percent cost of living increase that has been provided after the pay demonstration program went into effect.

We have done an analysis of the number of people that are eligible to retire at each one of these facilities. The number will turn

out to be modest. It is about 100 total for all of the facilities, and we believe that we will not have any difficulty in restaffing those facilities today should any or all of them choose to retire.

It was a good program when it started. It is not worth \$20 million today.

Mr. CARR. So you believe that you can fill 100 slots if people were to retire?

Mr. DEL BALZO. Yes, we can. You have heard this morning from GAO that we have a register of 25,000 people that we can choose from. We have people that are graduating from colleges now that will come to us with academy level experience, ready to be plugged into any facility where there is a need.

Mr. CARR. You say there are about 100 people who are eligible to retire.

Mr. DEL BALZO. Yes.

Mr. CARR. Have you done any surveys to indicate whether others might just quit, just resign?

Mr. DEL BALZO. No, we have not, sir.

Mr. CARR. What is the average pay for a controller at these locations?

Mr. DEL BALZO. Let me ask Mr. Pollard.

Mr. POLLARD. For instance, for the en route facilities which would be Chicago center and New York center, the average base pay would be approximately \$60,000 a year, plus a 5 percent operational readiness demonstration, plus in New York the 8 percent that Mr. Del Balzo referred to earlier.

In the other facilities, like the New York TRACON, the pay would be approximately the same. In other facilities that are maybe one grade below, the salaries are in the \$50,000 to \$65,000 range.

Mr. CARR. And the ending of the demo would put them where?

Mr. POLLARD. The ending of the demo for all sites other than Chicago would reduce their pay by 12 percent. In Chicago, it will be a 20 percent reduction because they do not have the geographical pay of 8 percent. Actually, the numbers I gave you do not include the 20 percent like for Chicago.

For instance, if you take the pay of a controller in Chicago, that averages about \$60,000, then you would add the 20 percent to that. So the salaries I gave you basically are what would be remaining after the demo goes away.

Mr. CARR. Those are post-demonstration, or pre-demonstration?

Mr. POLLARD. Right. It is their base salary, sir, and then from that they compute the percentage. The one other thing I might point out, the 8 percent is used to calculate annuity, where the 20 percent is not. In other words, it affects their retirement.

PAY DEMONSTRATION PROJECT

Mr. CARR. Why didn't Chicago get the 8 percent?

Mr. POLLARD. Chicago was not included in the Federal Employees Pay Comparability Act when OPM decided the locations that were entitled to an 8 percent geographical pay. That was not a FAA decision.

Mr. CARR. So in other words, if you are a controller, the base pay is \$60,000, and you have a 20 percent pay demo, you are making \$72,000 approximately?

Mr. POLLARD. Yes, sir. And it is real hard to generalize because some of the controllers have been there one year, some have been there more, and the pay varies. But there is other compensation that they can get. They get 10 percent for working nights, 25 percent for working Sunday, and obviously if they work overtime, they get time and a half for that.

Mr. CARR. Do we have many controllers that are making six figures?

Mr. POLLARD. We have some controllers, but not as many as we had when we were utilizing a lot more overtime than we are using now. We have some controllers and some first-line supervisors that do break the \$100,000 range with the pay demo.

Mr. CARR. Obviously the news that the President is proposing to eliminate the pay demo was not greeted with a great deal of enthusiasm in some of these places. What have the controllers told you from those locations, Mr. Pollard?

Do you think some of these people will just quit, resign, as opposed to retire?

Mr. POLLARD. No, sir. I would almost be willing to say there would be none that would just leave. We do have a phase out for the controllers and kind of a soft fall for them is that if they just reported, they would be entitled to the pay for a year. That is part of our Memorandum of Understanding with the controllers' union. Obviously, they are all disappointed taking a pay cut.

I think most of them probably in all honesty expected that this would be around forever and that some reason would be found for the pay demo to continue. They don't like the termination. Some of them, if you talk privately, I think understand why we are doing it, but still it is a personal impact.

Mr. CARR. The pay demonstration project, if my memory serves me right, has never been wildly popular among FAA management. Were there reasons other than budget austerity to getting rid of the pay demonstration project?

Mr. POLLARD. No, sir. I would say—I mean, we obviously don't need to create problems to solve. We have enough that are out there and this is certainly creating an emotional situation for our employees and we would not be driving to terminate the program some nine months early if it was just a management concern. There is a funding concern there also.

We spend upwards of \$20 million a year for about 2,100 employees that are covered within the pay demo.

Mr. CARR. Well, given that the pay demo was put on for a period of time until, I guess, June of 1994, couldn't the controllers make the argument that, okay, it was a demo and, it is coming home to me that this is not going to go on forever, but you did promise me that I would get it until June of 1994.

Mr. POLLARD. I think it was a test program that was to go no longer than June of 1994. I think probably if the administration had chosen to terminate it earlier, that perhaps they could have done that. We had not done that until this year.

I think it is fair also to point out that by this cost avoidance, we are able to include in our budget additional funding for permanent change of stations which was outlined this morning by GAO as a need. This reduced liability will give us more flexibility, and we will be able, hopefully, to direct more money to permanent change of stations that would benefit basically the entire work force. We would also be able to handle some of the imbalances that exist out there in the staffing.

I was just going to say, it would be an emotional situation, whether we terminate it in June of 1994 or whether we terminate it now. It seems that the best management approach was to address it at this point.

Mr. CARR. I might point out too that there was another problem with the pay demo because in any event, you have to draw a line and there were some people who were just on the outside of the line. Those people generally found their way into congressional offices trying to move the line an inch more in their direction so that they would be covered by it.

I am concerned about the fairness to people who have made plans in their family budgets and I think it would be reasonable to assume that you would get it until the end of the program. That is the one thing that concerns me, because all of us, in our private lives, make plans for kids in school. This is no time for a pay demo controller to have just signed a contract on the renovation of a house and then find out that the demo is ending. I think these controllers can probably adjust and will have to adjust.

I think the handwriting is on the wall, but I am just a little concerned about how fast you make them accommodate, because in daily lives, you make some plans and you rely to your detriment and then it works a real unfairness.

Mr. DEL BALZO. Mr. Chairman, we share that concern. I wish that we could have given 12 to 18 months notice, that this was something we had to do. We could not do that. We did not foresee that we would have to do this. This was the second to the last thing that was on our table. In the end, we had no choice.

Mr. CARR. Did you ask the OMB to end the pay demo immediately or did they strongly suggest it to you?

Mr. DEL BALZO. This was our proposal.

Mr. CARR. This was your proposal?

Mr. DEL BALZO. Yes, sir.

DIRECT USER ACCESS TERMINAL (DUATS)

Mr. CARR. You mentioned DUATS. That hasn't been given a lot of attention. Why don't you briefly describe for the record the program and what the implications are for eliminating it.

Mr. DEL BALZO. Several years ago when we were in the process of consolidating flight service stations and we were not as far along as we are today, we were not delivering adequate service to the general aviation population; it would not be unusual, for example, for a general aviation pilot to call a flight service station and wait 20 minutes, 25 minutes before his call would get through.

The quality of the briefing that was being given from the flight service station, because of the old technology, because of the situa-

tion regarding consolidation, was not as high as we would like it to have been, so we decided several years ago to subsidize a couple of vendors, to provide what we call a direct user access to flight service services.

You can get a weather briefing by calling an 800 line. You can actually file a flight plan by calling an 800 line and you can do this from a terminal. You can do it from your own computer terminal. That program is being managed by two contractors, two different vendors, is costing us \$13 million a year, and the time has changed. Time has changed since we first put that program into effect.

Each call costs us \$2.52. I think that is expensive. What we find is that more than half, a little less than three-quarters of the people who use DUAT—for some reason that I don't understand—also call the flight service station. With the automated network that we now have in place, it is unusual for a general aviation pilot to call a flight service station and wait more than 60 seconds before he or she is provided service.

If a flight service station is busy, that call is automatically transferred to another flight service station as part of what modernization was all about. And in addition, there are several other vendors that are providing the same service without a subsidy.

We believe that if we remove the subsidy from these two vendors, these two vendors will stay in business, they will continue to provide the service, and that service will be available for those pilots who choose not to get the same service from a flight service station at no cost.

So we choose to remove the subsidy at a savings of \$13 million, but the service that is now being provided will continue to be provided by a flight service station at no cost to the pilot.

Mr. CARR. Who are the two vendors.

Mr. DEL BALZO. It is a vendor called DTC. I think it is DTC and Contel. Those are the two vendors.

Mr. CARR. Mr. Wolf.

TERM FOR THE FAA ADMINISTRATOR

Mr. WOLF. Thank you, Mr. Chairman. Mr. Del Balzo, welcome to the committee. You were in the audience earlier in the day when I asked the GAO the question with regard to the term of the FAA administrator.

Do you have any thoughts about that in light of the fact I think the St. Lawrence Seaway administrator in the Department of Transportation is, I think, six or seven years. Do you have any thought about making the FAA administrator term a set term?

Mr. DEL BALZO. I have thoughts about long-term stability and long-term direction, policy direction in the agency. I think we agree that that is what we need. And I believe that there are several ways that you could go about achieving that, and one way is to think about a fixed term for an administrator that could be five years, seven years, 10 years.

It is not clear to me that that solves the problem. It is not clear to me because what was said this morning is that since 1982, we have had five administrators. It turns out that three of those five administrators left before their term was over, having nothing to

do with the political change in administrations. They just chose to leave.

So even if we had a fixed term for an administrator in place, we would have lost three administrators anyway for other reasons.

Mr. WOLF. Not necessarily though. The way they do it with the FBI is when they select someone, there is a general understanding that that person—Judge Webster was a Federal judge and stayed for the full term. Judge Sessions would like to have the opportunity to stay the full time, and so it is a little bit different.

There is a culture that has developed there that when someone accepts the job, subject to health or a problem in the family, that they are there for the whole time, whereas in the FAA or most of the others, Bureau of Land Management or something like this, and the Department of Interior, you are there for as long as you want to stay or until the administration changes.

At the Park Service, at the Department of Interior, they have had a culture over there of directors of the National Park Service coming from within the Park Service and also staying a long, long period of time.

Mr. DEL BALZO. Well taken. I think of two other points on that issue. One has to do with the relationship between a FAA administrator and a Secretary of Transportation. If that relationship is not right, we will pay a pretty heavy price, and there have been times where the relationship has not been right.

So I think you just think a little bit about whether or not we do anything to sever that relationship by having a Secretary inherit an administrator that has a long fixed term. May or may not be a problem, just something I think about.

And the other thing I think about in terms of long-term stability, I believe that long-term stability, in fact, really comes from the career executives. I believe that we are providing long-term stability during this three month period of the leadership vacuum.

So I am not so much concerned about what happens during leadership vacuums. I am not that concerned about long-term stability because in fact I think we would have that as well.

Mr. WOLF. I think to a certain extent you do too and I didn't mean it as a criticism to say that you don't.

I worked for the Department of Interior and a lot of what I come up with is based on my life experiences and we are all that way. Our life experiences give us ideas. I know how difficult it is when there is a change in administrations, and a change of secretaries.

You are not sure what the Secretary's attitude is going to be, you are not sure what his or her priorities are going to be. There is a pause that comes into a department.

Also, a career person has to be careful about what happens to his or her career. You can follow through on normal everyday things, but if you get to be 51, 52, you certainly have to be careful. They may move you out, and the opportunities to go on and find another job may not be that good.

I just think human nature forces every one to sort of hunker down for awhile. We don't do very much in January, February and March in the Congress, when a new Congress comes in. In the first session no one is sure who is going to be the new subcommittee

chairmen or the new chairmen, or who is going to win the leadership races or what their attitudes are going to be.

So basically you are telling me you don't have any strong feelings against it.

Mr. DEL BALZO. No, I don't.

INCIDENTS INVOLVING PROPELLERS

Mr. WOLF. I am not asking you to speak for the Department.

Mr. Broderick, I read in the paper the other day about the propeller-related accident involving the plane that the governor of South Dakota was in. It looked like this may be a recurring situation.

Can you just give us the status of your investigation into this matter?

Mr. BRODERICK. I can only add a bit to what you read, sir. In late 1991, there was an incident involving a foreign registered airplane in the United States in which a propeller hub fractured and a blade came off. The airplane landed safely. FAA and the NTSB looked at that fracture, along with the manufacturer. NTSB and our view was that we should work with the manufacturer to understand what had happened because it really wasn't clear why the fracture occurred.

It wasn't a particularly high stressed area of that aircraft. They also suggested that we should develop an inspection technique, because it is a very difficult place to inspect, and issue an air worthiness directive.

We had an exchange of information with the Board. We didn't think that it was appropriate to agree to an air worthiness directive. We hadn't yet developed an inspection program. They provided some additional data that they developed and we were in the process of evaluating that when the tragic accident occurred a few days ago.

It appears to be days later, and I stress it appears to be only days later remarkably similar to what occurred back in 1991. About 35,000 of these propellers have been manufactured in one form or another since the early 1960's.

These are the first two accidents. The first one was the only one that had occurred up until the South Dakota airplane tragedy, and we are working at the highest priority to try and understand exactly what happened and exactly what we can do to prevent a recurrence of that accident.

Mr. WOLF. When do you think you will know whether you should be putting something out?

Mr. BRODERICK. We hope to learn more. We have learned a little bit more this weekend. We worked over the weekend with the Board and the manufacturer and we hope to be able to do something within the next few days.

We can't promise anything because that is sort of pushing the development of the actual understanding. We don't yet have a full understanding of why that has occurred. We are trying to see if we can put together an inspection and to which aircraft it ought to apply.

Mr. WOLF. How many aircraft would have that propeller now?

Mr. BRODERICK. Of course, until we decide how to define the population, we won't know the particular kind of aircraft that had these two events. There are about 115 of them, I think. But there are, as I said, a total of about 35,000 of these types of propellers that have been manufactured. So it is a lot of aircraft potentially.

Mr. WOLF. How many of the 115 aircraft are in the U.S.?

Mr. BRODERICK. I believe that is the U.S. population that I gave you.

Mr. WOLF. Well, obviously I think that is something you and NTSB, as quickly as you can, ought to be dealing with.

Mr. BRODERICK. That is something we are putting the highest priority on right now.

PASSENGER FACILITY CHARGES (PFCs)

Mr. WOLF. Mr. Del Balzo, on the PFCs, the airline industry has been complaining about the PFCs and they maintain they are unable to pass these charges on. There was some talk of eliminating them or rolling back the ticket tax to 8 percent to help the industry. What is your feeling with regard to something like that?

Mr. DEL BALZO. I think we have managed the PFC program, I want to say, remarkably well. I have not heard any airline criticize what we have approved on all the PFCs that we have approved to date. If you look at the amount of money that we have approved for collection, it is just about equal to the amount of money that we have either disapproved or deferred or had the airport authority go back.

Mr. WOLF. How much has been approved?

Mr. TAYLOR. Just a bit over \$6 billion.

Mr. WOLF. And how many applications have been approved and how many have been denied? Is it 50/50?

Mr. TAYLOR. In dollar volume. And they have been approved or disapproved for entirely different reasons.

Let me just take a second here to let you know about that. We received, have received a total of \$14.5 billion in terms of passenger facility charge system requests. Our system of managing those systems regards the opinion of the carriers, the worthiness of the projects that the airports would like to apply these moneys to, capacity issues, a whole range of things.

At any rate, the FAA has approved only \$6.4 billion. We have disapproved nearly outright \$1.8 billion, I don't know, and we have deferred decisions on \$141 million, all for good cause. But this is perhaps just as important; public agencies have withdrawn projects totaling \$6.3 billion after consultation with the FAA.

Mr. WOLF. \$6.3 billion?

Mr. TAYLOR. Yes. And what does that consultation mean? It means that the airport sponsors consult with the FAA regarding the merits of the projects that they would like to fund. In some cases, we advise against it. In some cases, we advise against it after consultation with the air carriers.

Mr. WOLF. Do they phase out after the project is finished?

Mr. TAYLOR. Yes, they do.

PFCS FOR NATIONAL AIRPORT

Mr. WOLF. They do. And is one of the ones you have approved, the one at National Airport?

Mr. TAYLOR. We have not yet approved that. That relates to the terminal building expansion. We do have in place a letter of intent of about \$100 million, \$106 million. The terminal building development has been taken under advisement because of environmental concerns regarding the relocation of the air traffic control tower. So at the same time, we understand that the Metropolitan Washington Airport Authority is reevaluating their terminal building construction to see what kind of new efficiencies and economies they can build into it, such as to, in effect, reduce the level of passenger facility charges that they would apply to that structure.

Mr. WOLF. Their initial request was what, three dollars? What is it?

Mr. TAYLOR. In terms of the passenger facility charge, yes, three dollars.

Mr. WOLF. So based on their analysis then, that may drop?

Mr. TAYLOR. It could, it could. Or the term of the passenger facility charge system could be contracted or the total amounts of monies that would be collected via the passenger facility charge system could be reduced in the overall.

Mr. WOLF. What have the airlines said about the National Airport request?

Mr. TAYLOR. They have raised questions, but I think in the—I don't think, I know, in the constructive sense. And I am advised after talking with the likes of Ron Linton and others, Jim Wilding, that they are constructively considering, reviewing the airline suggestions regarding economies that might be built into that terminal building.

Mr. WOLF. Could you keep me informed of that, because this obviously has an impact to the people from this region. I have read about it in the paper. If you could let me know or keep me informed that you are moving along on it.

Mr. TAYLOR. Certainly, I'd be happy to.

ILLEGAL DRUGS IN U.S. REGISTERED PLANES

Mr. WOLF. Thank you. When an aircraft has an "N" in its registry and it is abroad, does that mean it is a U.S. flight?

Mr. DEL BALZO. Yes, sir.

Mr. WOLF. In the month of February, I was in Sudan. We flew to southern Sudan to look at the famine, and at the airport, Wilson Field in Kenya the day we were there; there were a number of planes that had the "N" in the registry that were carrying the drug qat. And they were obviously probably leased. It was very difficult to go up and talk to the different pilots. Planes were taking off.

As you know or may not know, in Somalia the drug of choice, if you will, it is some sort of narcotic. Perhaps it is like coffee or perhaps it is like cocaine, I am not really sure. It is not apparently that strong. But all of the people, the soldiers and the different people, rebels in Somalia chew it. We went into Somalia afterward, and all of the different NGOs, the nongovernment organizations,

hire guards to guard their compounds and almost all of the guards were chewing qat. And it was coming out of Kenya where they grow it.

What disturbed me, and I am not so sure it is a violation of American law or not, but it was on aircraft with the registry "N."

Mr. DEL BALZO. Congressman, let me ask Mr. Broderick to shed some light on that.

Mr. BRODERICK. The "N" on the registration means that it is an aircraft that is registered in the United States. Normally it is also owned by someone, a person in the United States, but a person in the United States could also be a beneficial trust. So it is not clear in some cases exactly what the citizenship is of the person, the human being that owns that airplane.

What that registration means by international law is that its maintenance must be done in accordance with the law of the land of registry, in this case, the United States, and the pilot must be licensed by the United States to fly the aircraft. The operation of that aircraft, however, in another country, doesn't come directly under the United States control. Just like airplanes in the United States from Canada, Mexico or any other country come under the operational control of the United States.

Mr. WOLF. Let me ask you—

Mr. BRODERICK. And another country would be the same.

Mr. WOLF. I appreciate that, that would answer the question.

Would it be against the law for an American, an airplane registered in America, to be flying cargo such as this, or would that be determined by the country that it was in?

Mr. BRODERICK. I don't know. We would have to look at the specific facts and have our counsel, I am sure, rule on it.

[The information follows:]

Whether a U.S.-registered aircraft may be used to transport qat, and whether a U.S. law enforcement agency has jurisdiction over such conduct, appears to depend on whether qat is classified as a controlled substance under the U.S. law. The resolution of these questions appear to lie within the purview of the Federal Bureau of Investigation or the Drug Enforcement Agency. Accordingly, we have forwarded this inquiry to those agencies for response.

Mr. WOLF. They were carrying this drug. Clearly, they were just stuffing it in the back and stuffing it in the sides. You have to use it within three days or it loses its potency. I don't know if there was an American law being violated or not.

Do you have anybody in Kenya; does the FAA have anybody in Nairobi?

Mr. BRODERICK. We have no one in Nairobi but we do have a senior representative for Dakar, which is, of course, on the other side of the continent.

Mr. WOLF. Well, someday, I don't know how you would do it, maybe ask somebody from the U.S. Embassy, we have a large Embassy in Kenya, just to go out to Wilson Field about 6:00 in the morning, stay to about 8:30, because they leave fairly early to get up there.

See if you could do that, do it fairly soon, if somebody could just go out and write the tail numbers down. It is pretty obvious what is going in there. Maybe if you could get back to me on that.

Mr. BRODERICK. Maybe we can make a contact through the authorities in Kenya.

Mr. WOLF. Okay. Maybe DEA people, we probably have DEA people there.

Mr. BRODERICK. We will be happy to look into it.

ALTERNATIVE WORK OPTIONS

Mr. WOLF. You are moving ahead on the child care issue, and I just want to ask for the record, I think the answer is yes, but FAA does take advantage of flexi-time, flexi-place, job sharing and lease sharing?

Mr. BELGER. Yes, we do.

Mr. WOLF. How about telecommuting, whereby if there is an FAA employee who lives in the Shenandoah Valley, if they have the type of job that would allow them to sit before a computer terminal, could they use telecommuting and go to a telecommuting center? Is there someplace in Winchester, something like that?

Mr. DEL BALZO. Congressman, we are not at this point yet. It is a proposal that we are reviewing. We are not implementing telecommuting.

Mr. WOLF. Could you look at that certainly on a pilot program? We have helped start a telecommuting center, which will be up and running next year in Winchester. A lot of your people live in Loudoun County and some actually live in Clark County, and I think some of your people might have a job that would fit in such a demonstration project. Would you look into this? That way, if it is a mom or dad, there is a greater opportunity to spend more time with the children. Rather than getting up in the morning in Western Loudoun, driving an hour and a half into Washington, if you could drive a half an hour into the Winchester area, that would certainly give you more time to coach Little League or spend time with your kids.

The American family is under great pressure, with too little time to spend with kids, and if you could look at that, I would appreciate it.

Mr. DEL BALZO. Congressman, we will.

Not too long ago we attempted one or two experiments. I am not sure whether or not they are still ongoing, whether or not we have the results in. We will keep you informed, we will share all the information with you.

Mr. WOLF. What about job sharing?

Mr. DEL BALZO. Mr. McLure?

Mr. McLURE. Yes, we do have a fair number of part-time employees, and some of them do that as a way of job sharing. So one person will work the morning, the other person work the afternoon.

Mr. WOLF. Do you have a formal program whereby the opportunity is known by the employees, that there is an opportunity for two people to share the same job?

Mr. McLURE. In some of our facilities we do, in others we don't.

Mr. WOLF. Do you here in the Washington area?

Mr. McLURE. Yes.

Mr. WOLF. Okay, good. If you could give us an update on all, flex-time, flex-time, job sharing, telecommuting, where we are, that would be helpful. The purpose of all of these, and most are in legislation that I put in the Treasury Appropriations bill, are to help parents spend more time with their kids.

We find in job sharing you actually get more time, more work out of the person, because they are so thankful to have the job and they come in, there is very little time wasted and it is good for the agencies, also good for the employee. So if you could kind of give us an update.

Mr. DEL BALZO. Yes, sir.

[The information follows:]

NON-TRADITIONAL WORK SCHEDULES AND ARRANGEMENTS

FAA fully supports the following concepts as means to improve the quality of worklife for agency employees and to promote workforce diversity.

Flexiplace/Telecommuting

Work arrangements whereby an employee works at home or in a satellite office during regularly scheduled work hours, rather than the conventional workplace.

- President's Council on Management Improvement (PCMI), in conjunction with OPM/GSA, began pilot test in 1990. 15 Federal Departments/Agencies and about 1,000 employees nationwide (less than 1% of eligible population) currently participate in the pilot.
- FAA submitted a proposal for FAA participation in the pilot test to DOT in May 1992. DOT will consider FAA's proposal after the DOT order on Flexible Work Arrangements has been approved. Action on the DOT order by the Secretary of Transportation has been deferred, pending appointment of modal administrators.
- Only current formal program of this type in FAA is AEA's Work at Home program, currently covering 3 intermittent employees performing word processing.

Alternative Work Schedules

Choice of either a standard work schedule, flexible schedule, or compressed schedule, allowing the employee to preselect or vary arrival and departure times, the length of the workweek, or both.

- Federal agencies were given permanent authority for AWS in 1985. OST authorized AWS and delegated authority in June 1990.
- NATCA, NAATS & PASS bargaining unit employees began AWS experiments in 1989 based on provisions of negotiated agreements. Air Traffic & Airway Facilities nonbargaining unit employees in field facilities were authorized use of AWS in 1991.
- All regional offices, centers, and Washington headquarters currently have some form of AWS.
- Employee reactions to the program seem to be very positive. Formal evaluation of the program by FAA is currently underway. A survey has been developed to be administered to random sample of FAA employees in August 1993.

Job Sharing

Work arrangement whereby two (or more) part-time employees voluntarily share duties and responsibilities of a single full-time position.

- Governmentwide policy was published by OPM in March 1985.
- Job-sharing is permitted at FAA under Governmentwide policy.

THERMAL NEUTRON ANALYSIS (TNA) AT DULLES AIRPORT

Mr. WOLF. A question the Chairman asked, I won't repeat, but one of the AIP projects is to develop some sort of national goals or standards. I think it is very, very important, but we can deal with that later.

On the Pan Am Flight 103 and the security issue, there was research done on bomb detection and ways to enhance aircraft survivability. There was a system put in at Dulles Airport which has now been taken out. Do you know why that was taken out?

Mr. DEL BALZO. The Director of Security, General Steele, is with us this morning. Let me ask him to respond.

Mr. STEELE. Yes, Congressman, that was the thermal neutron analysis system or TNA. As you know, we had six of those machines that we bought through F&E, and we were evaluating them in an operational test, and among other places, we were doing that at Dulles. We had it there for over two years.

We decommissioned that one about mid-November, as I recall. We had learned just about everything we could from it and the air carrier that was sponsoring it, in this case, United Airlines, which had done a lot of the work and was underwriting a lot of the costs, about \$50,000 a year, also requested that we remove it. So because of those added costs, and because we had learned everything we could, we decided to stop that test there.

Mr. WOLF. What did you learn? Is it effective, or what do you think about it?

Mr. STEELE. Well, of course TNA is the prototype or the forerunner of what we expect in other explosive detection systems. We processed about 750,000 bags in different climates and places, different configurations, in places such as both baggage handling areas, as well as in concourses.

The TNA at Dulles happened to be in a concourse. Elsewhere, we also used it in conjunction with other types of explosive detection systems. So the value of these tests was in that we better understood working speeds, the number of people processed, how we could tie it in with other systems in profiling ways. So in this particular test, the system was in a concourse and we had learned everything we could on that one.

TNA EVALUATION PROGRAM

Mr. WOLF. But did you learn that it is effective? And where—what other airports are they used in?

Mr. STEELE. The places that also have been used in the evaluation program over the last three years include JFK, Miami, and Gatwick Airport in the UK.

We have two TNA systems going in right now to San Francisco. Those are probably the last ones that we will employ in this country, barring any sort of a major change or emergency, until we actually certify explosive detection systems or EDS. And we expect to start certifying EDS very quickly, sometime this summer.

At San Francisco, the TNAs will be put in under an airport authority through special arrangements. In other tests we worked directly with the air carrier.

CERTIFICATION OF EXPLOSIVE DETECTION SYSTEMS (EDS)

Mr. WOLF. When you certify them, what will that mean?

Mr. STEELE. We were directed by the Congress that before we could ever deploy or mandate an automated explosive detection system, that we first of all take a number of steps. They included putting out a test protocol, which is now out, prepared for us by the National Academy of Sciences, and publishing the standards that we expect, and the systems to meet to be certified. The standards will explain precisely what the system must be able to do as far as stopping explosives and preventing them from getting on an airplane. Those are all now or will soon be in place.

We have a place at our Technical Center at Atlantic City that is prepared to start certification testing. After that, which we expect to start in August, we will probably start to see some candidate explosive detection systems coming up.

What we are talking about is other types of technology besides the thermal neutron analysis technology.

Mr. WOLF. Where do the American companies rate, compare, with regard to the Japanese? I know we had testimony two, three years ago, before this committee, they were talking about the fact that the Japanese were very aggressive, very active in this area. Also I believe the French were also.

Where are we now? That technology?

Mr. STEELE. Well, we do have bilateral arrangements that we are working with, including working with the French. We are also working with the British.

Mr. WOLF. When you say bilateral?

Mr. STEELE. In explosive detection technology research.

Mr. WOLF. But are we giving it to them whereby they can take this and move ahead aggressively?

Mr. STEELE. Well, I think these bilaterals really provide a better division of labor. Rather than both of us trying to chase the same problem, we may take a different piece of the problem and they take a different piece of the problem. That is generally what we are doing, whether it be in aircraft hardening or any of the other security R&D areas.

But I am not aware of any Japanese technology that is surging ahead in this area.

COOPERATIVE R&D EFFORTS WITH THE FRENCH

Mr. WOLF. What about the French?

Mr. STEELE. The French have had some technology and they have also run into some of the same technical problems that we have experienced. The Germans are pushing some technology that they were trying to put into Zurich. I heard recently that is probably not going to measure up to their expectations. I think they have delayed that.

The technologies that we see now as probably holding the most promise come out of the advanced X-rays of the medical world, which are some kind of CAT scan, or multienergy technologies. These look very promising, and indeed the preliminary tests indicate that these systems will probably be early contenders.

Mr. WOLF. Are you working with American manufacturers so we are poised to take advantage of that and not the foreign companies?

Mr. STEELE. Oh, absolutely, yes through very aggressive research and development, as well as facility in expediting whatever they may have developed beforehand.

Mr. WOLF. Does any of our Federal money go to cooperative efforts with the French?

Mr. STEELE. There is, and I can't—I will have to get it for the record.

[The information follows:]

There are cooperative funds in Aircraft Hardening but no money goes to the French.

Mr. STEELE. There is mutual interest in handling not so much the baggage as containerized cargo, and being able to screen that in a very quick and efficient way before it goes into either a container ship, the "channel" or an airplane. And that is generally where we are looking in the cargo area.

Mr. WOLF. If you would keep us informed. I am concerned that we don't lose that technology for American companies and that it doesn't go abroad, particularly with American taxpayer research and development dollars. The French are our good friends. And if anyone watching, we like the French, but they have an aggressive intelligence activity directed toward American technology, to find American technology that they can take and use to help French companies. And we would want to be sensitive that we are not shipping this technology abroad.

Mr. STEELE. Yes, there is some predominantly American equipment that perhaps has not been completely certified by us, but yet has been accepted by other airport authorities in Britain and Germany for example. They are actually buying American technology and beginning to put in some of these combinations. We have worked together with them on that, so we know the results pretty well.

RUNWAYS AT STAPLETON AIRPORT

Mr. WOLF. Okay. Mr. Del Balzo, on the Denver Airport, the committee was told there is a move to keep a runway open at Stapleton for maintenance activities for an airline. Other airlines see this as a potential threat with regard to "the camel's nose under the tent." Can you see any circumstances under which you would approve or recommend approval for a runway to remain open at Stapleton?

Mr. DEL BALZO. At Stapleton, no, sir, I do not foresee that. It would be in violation of the grant agreement that we have with that airport.

We had an agreement that runway would be closed and we intend to hold to that agreement.

DENVER AIRPORT—CARGO FACILITY RELOCATION

Mr. WOLF. Thank you. I had asked Secretary Peña to look at the safety and environmental issues which have been raised. Someone

sent me a memo concerning the relocation of the cargo facility from the north to the south end of the airport.

There is also apparently a court challenge filed by Adams County which gave up quite a bit of land on the premise that the cargo facility would be located on the north end, and would therefore yield a large economic gain to Adams County.

Have you looked at that after the Secretary's hearing? Has the FAA approved this change or what is taking place with regard to that cargo facility location?

Mr. DEL BALZO. We have looked at that issue. I think you know that it has been a contentious issue, regarding whether or not that cargo capability would be at the Front Range airport or whether or not it would be at the other airport.

Mr. WOLF. Are you making a recommendation where you think it ought to be?

Mr. DEL BALZO. I am not sure that we are at that point yet.

Quentin?

Mr. TAYLOR. I believe that we are at that point. We have reviewed the revised airport layout plan at the new airport at Denver, and we have reviewed that rigorously, finding that the airport would be advantaged at Denver by moving the cargo facility to the south side of the airport. There are no safety disadvantages in doing so. There are no operational disadvantages in doing so. Now, more than that, the cargo flyers or operators have agreed in majority to relocate to the new Denver Airport, foresaking, if you will, Front Range. The court case still goes on in the 10th District Circuit Court of the District of Columbia, and that is still active.

Mr. WOLF. So your recommendation would be on the south?

Mr. TAYLOR. Excuse me?

Mr. WOLF. Your recommendation would be on the south and Adams County wanted the other end. You are telling Denver they should go ahead, they have the ability now to go ahead?

Mr. TAYLOR. Yes, they do.

Mr. WOLF. Okay. Then—this memo here said relocation conflicts with planned air traffic flow when air cargo is given preferred runway for arrival and departure. Rather than taking up the committee's time, if I could share this with you and you look at it and give us your recommendations. Obviously, you know what you are doing, but if you take a look at this and give me a comment on it.

Mr. TAYLOR. We will.

Mr. WOLF. On this question, is it true Denver will now be taking an additional \$40 to \$50 million to build the cargo facility because they have expended the amount originally appropriated for this airport and relocation efforts?

Mr. TAYLOR. I am unaware of that. We are aware that Denver would like to invest in an added runway. But I am not aware of any requests for funds for the cargo facility.

Mr. WOLF. If one comes in, you will let the committee know?

Mr. TAYLOR. Certainly.

INTERNATIONAL PARENTAL CHILD ABDUCTION

Mr. WOLF. Good, thanks. On the question of international parental child abduction, there is a group, One World of Children, that is trying to address this problem.

It is based on a father or a mother abducting a child from this country and taking them abroad. There is the one case of a woman named Shana in Yugoslavia, whose husband was a Yugoslav, who took the children outside and she has been trying to get the two children back for three years.

There is also the case about Iran, which was the subject of a movie. Could something be done with regard to a nationwide register through the computer reservation system, whereby the airlines could check as young children were being taken out of the country, do you follow what—

Mr. DEL BALZO. Congressman, I just don't know. I don't know whether or not someone around the table has an opinion.

Mr. WOLF. Anybody have an opinion around the table?

Mr. BRODERICK. I would think something like that would likely fall under the Department of Transportation's authority, rather than ours, which seemed to be more limited to safety.

Mr. WOLF. Who in the Department? We can contact them.

Mr. BRODERICK. Well, we can look into it and get back to you.

FAA OPERATIONAL REGULATIONS FOR AIRLINES

Mr. WOLF. If you would, I would appreciate it. This is basically so a father or mother cannot abscond, leave the country, and take the child into an area over which we have no jurisdiction.

When the airlines came up before the committee in a briefing that the Chairman had, we were told that there are certain requirements that apply to domestic air carriers that foreign airlines are not subject to once they pull away from the gate. One they mentioned was the so-called "cup rule." Another was the deicing procedures.

Are there FAA regulations that apply to American carriers that are not applied to foreign airlines? If so, what are they? And if there are any, should they not be also applied, to the foreign carriers.

Mr. DEL BALZO. Congressman, there are some and it is a complicated issue. It has to do with if we were to try and enforce all FAA standards on foreign carriers that operate in the United States, we would leave our carriers open and subject to the same kind of enforcement of rules and regulations when they are at international locations.

Mr. WOLF. But is it generally true that American regulations are more stringent than foreign regulations, particularly in a lot of the countries you fly into?

Mr. DEL BALZO. Let's say for the most part that is true, but I would also say that in many cases they are just different.

I would ask Mr. Broderick to expand.

Mr. BRODERICK. Well, we have, Mr. Wolf, acceded to the Convention on Civil Aviation, more commonly known as the Chicago Convention in 1944. And through that, we have developed over the

almost 50 years since, a comprehensive set of international standards that apply to operation and maintenance of aircraft.

This morning, Mr. Mead, from GAO, mentioned the aggressive program that we have and the increase in inspections that we are in fact doing to ensure that airlines coming into this country live up to their obligations under that convention. We have about 475 airlines that are foreign owned or operated, that operate into the United States. About half of those are Canadian. Still, that leaves about 200, 250 airlines coming from something on the order of 90 countries.

The point that Joe mentioned is a very good one. There are many countries with very good regulations. Let's say there are only 25 countries with good sets of regulations that are different from ours.

I can't imagine rejecting the concept of the international convention and having each country apply its operating rules to all carriers in that country. It would be very difficult to see.

It would also be very difficult to enforce. Most of the really important safety regulations rely on training programs, maintenance records, the kinds of things that you wouldn't be able to enforce just by seeing the airplane.

REGULATIONS FOR DEICING

Mr. WOLF. Well, from an operational point of view, maybe you can give us a list of the regulations that we apply to American companies that are not applied to foreign ones, all of them, but perhaps emphasizing just the operational ones. For example, is there a difference on deicing?

[The information follows:]

Foreign air carrier operations within the United States are governed by the applicable requirements of Federal Aviation Regulations (FAR) Parts 91 and 129; the requirements contained in the operations specifications issued to each foreign air carrier holding a permit issued pursuant to section 402 of the Federal Aviation Act of 1958, as amended; and the Standards and Recommended Practices contained in Part 1 (International Commercial Air Transport) of Annex 6 (Operation of aircraft) to the Convention on International Civil Aviation Organization (ICAO).

U.S. air carrier operations which are conducted in a foreign country are governed by the applicable requirements contained in Special Federal Aviation Regulation No. 38-2 and FAR Parts 121 and 135, except that the operator must comply with the air traffic rules of the country concerned and the local airport rules, except where any rule of Part 121 or Part 135 is more restrictive and may be followed without violating the rules of that country.

For foreign air carriers, the requirements of Part 91 generally apply to their operations within the U.S. unless the requirements of the State of the operator, which may meet or exceed the applicable standards contained in Part 1 of ICAO Annex 6, are more stringent than those requirements.

The requirements of FAR Part 91 govern the operation of aircraft within the United States. The requirements are generally applicable to all persons including foreign and U.S. air carriers. The rules that apply only to air carrier operators of U.S.-registered civil aircraft are as follows:

SUBPART A—GENERAL

FAR Sections 91.21 (Portable electronic devices) and 91.23 (Truth-in-leasing clause requirement in leases and conditional sales contracts)

SUBPART B—FLIGHT RULES GENERAL

FAR Section 91.107 (Use of safety belts, shoulder harnesses, and child restraint systems)

SUBPART C—EQUIPMENT, INSTRUMENT, AND CERTIFICATE REQUIREMENTS

FAR Sections 91.205 (Powered civil aircraft with standard category U.S. airworthiness certificates: Instruments and equipment requirements) and 91.219 (Altitude alerting system or device: Turbojet-powered civil airplanes)

SUBPART D—SPECIAL FLIGHT OPERATIONS

FAR Section 91.323 (Increased maximum certificated weights for certain airplanes operated in Alaska)

SUBPART E—MAINTENANCE, PREVENTIVE MAINTENANCE, AND ALTERATIONS

This subpart does not apply to U.S. and foreign air carrier aircraft maintained in accordance with a continuous airworthiness maintenance program under FAR Parts 121, 129, or 135.

SUBPART F—LARGE AND TURBINE-POWERED MULTIENGINE AIRPLANES

The rules in this subpart do not apply to the airplanes covered by this subpart when they are required to be operated under FAR Parts 121, 129, and 135.

SUBPART G—ADDITIONAL EQUIPMENT AND OPERATING REQUIREMENTS FOR LARGE AND TRANSPORT CATEGORY AIRCRAFT

This subpart applies only to the operation of large and transport category U.S.-registered civil aircraft.

SUBPART H—FOREIGN AIRCRAFT OPERATIONS—FOREIGN AIRCRAFT OPERATIONS AND OPERATIONS OF U.S.-REGISTERED CIVIL AIRCRAFT OUTSIDE OF THE UNITED STATES

This subpart applies to the operations of civil aircraft of U.S. registry outside of the United States and the operations of foreign civil aircraft within the United States.

SUBPART I—OPERATING NOISE LIMITS

This subpart applies to U.S. and foreign air carriers.

SUBPART J—WAIVERS

This subpart applies to U.S. and foreign air carriers.

Mr. BRODERICK. Technically—that is a very good example. Technically speaking, the deicing rule does not apply to foreign carriers. Because of the fact that the airlines and others raised that this summer when we promulgated the rule, we made that a special emphasis in our inspections.

We did nearly 4,000 special deicing inspections this winter to see how the rule was being carried out. And we looked at about three dozen airports where deicing was underway.

We specifically looked to see if there was any competitive advantage or any problem with regard to the foreign operators. And the answer is just flatly, no. They are doing the same thing that the American carriers are.

Mr. WOLF. Are they doing it voluntarily or are they doing it because they have to?

Mr. BRODERICK. Well, they are doing it in both ways, voluntarily, because most of their countries have requirements that are similar to those in the United States. Different, as Joe said, but similar in terms of objective and concept.

Mr. WOLF. Would an airline coming out of South America have the same requirements on deicing? Because, obviously, the pilots would be perhaps less experienced and that may not be as much of a problem, let's say, in El Salvador.

Mr. BRODERICK. Well, that is true. But for flights into northern climates, it is also true that they recognize the weather here. I mean, we had 800 people at an International Conference on Deicing in May, out in Reston. And when we talk about people from Singapore Airlines, for example, who participated in that conference—they don't have very much ice in Singapore, but that airline flies around the world.

Nowadays, international airlines are international airlines.

SUSPECTED UNAPPROVED PARTS

Mr. WOLF. Well, if you would just give us a list of those requirements that we hold American carriers to, that we don't hold foreign carriers to, and maybe isolate out those that are operational, such as deicing. If we were to find out that at Dulles Airport, American carriers have to deice, and I am not questioning the FAA regs, but we would find that another airline would not have to—that is safety and it is cost. They are the type of things we need to look at.

The last question or two, and I have a number of others I will just submit for the record, is a question about bogus parts. Should we be regulating brokers that sell aircraft parts?

Mr. BRODERICK. We don't think so, Mr. Wolf. We have looked hard at that issue and we have concluded that if there is a problem with people who would willingly disobey the existing Federal regulations, we aren't going to solve that problem by merely issuing yet another Federal regulation.

There are those who disagree with us because in fact we are talking in part about a question of responsibility. Right now, for example, a repair station has the responsibility for ensuring that the parts that it uses are appropriate parts, that they meet FAA requirements.

It would seem to me that there is a likelihood that if you put a regulation in regulating brokers, you would take some of that responsibility away from them.

Mr. WOLF. Should we be increasing the penalties?

Mr. BRODERICK. I think we have adequate penalties for dealing with these kinds of issues, both in the civil side, and we have exercised them, and in the criminal side.

Mr. WOLF. But the IG report seems to indicate that is a growing problem, that they are barely scraping the surface of it. Is it a growing problem?

Mr. BRODERICK. I think it is fair to say that it is a growing record. We have focused on this issue because the IG focused on the issue.

We have put together an excellent, coordinated program that keeps very accurate records for the first time. In 1992, for example, we had, depending on how you count, something like 300, 400, or perhaps more, instances of individual allegations of suspected unapproved parts reported to the FAA.

Every one of those is being tracked, every one is being evaluated, but yet we have not found one single part out of that whole list of hundreds that required a mandatory recall, an airworthiness directive in our lingo.

Mr. WOLF. So this really isn't that much of a safety problem?

Mr. BRODERICK. It is not being allowed to become a safety problem.

Mr. WOLF. Okay. What percentage, or how many or what type of problem are bogus parts from China?

Mr. BRODERICK. Well, it doesn't matter what country you are talking about.

Mr. WOLF. I understand that, but are they at the forefront of bogus parts?

Mr. BRODERICK. No, I wouldn't say that at all. I think there has been some misunderstandings. China has a competent airworthiness authority. They have approved—

Mr. WOLF. They certainly had a lot of air crashes there the last year in China.

Mr. BRODERICK. Right, but let me just say that they have approved parts that replace parts on Western aircraft which we have evaluated as quite good parts. But technically, they are not legal to use in the United States because we haven't approved them. They are not for sale outside China, though.

Mr. WOLF. So you think the Chinese are doing a pretty good job, you don't think the bogus part problem for China is that much of a problem?

Mr. BRODERICK. No, sir, I don't think we have a particular bogus parts problem with China.

DRUG SEIZURES OF AIRCRAFT

Mr. WOLF. Okay. The last question, and the rest we will submit for the record on this round, is years ago it came out a number of carriers from South America were unknowingly carrying drugs. Can you give us a list of the seizures that have been made last year and the first three months of this year, of all the American carriers and the foreign carriers, particularly coming out of Colombia, from El Salvador and from American carriers?

For a while Eastern was doing a very bad job, we were finding a number of seizures there. One, if you can give us a list; but two, do you have any comments about how that is going?

The drug problem is increasing; it certainly is not diminishing.

Mr. DEL BALZO. Could you move forward, General Steele?

Mr. STEELE. As Assistant Administrator for Security, we are on the periphery of that particular issue. Mainly because it is, of course, run by DEA and Customs.

Mr. WOLF. I know that, I know DEA and Customs, and I serve on the Treasury Appropriations that deals with Customs. Eastern Airlines had employees down in South America and other places and Miami that were directly, actively involved.

Now, if we had an American company like that, or a company, I believe the FAA would have the ability to shut them down, or do something, if we had those places. So I know DEA has the enforcement aspect, but the ability to impact them comes directly, I think, from the FAA.

Mr. STEELE. Yes. Well, and certainly the measures that the Customs and DEA require complement our security side. I am sure you are very familiar with the super carrier requirements and they

have various levels of responsibilities that they place on the air carriers that are particularly coming out of the Andean places. And that one says that if you do everything that they believe is reasonable to prevent that drug from getting on, and if they should get on, why of course that mitigates many of the enforcement requirements. That happens to also support what we are trying to do in the security side as well. So we are aware of it.

I could talk to our colleagues in the other branches and find out exactly how that is working. And my own anecdotal knowledge, I was down at Dulles with American Airlines the other day, and the Customs people were talking about that. They have reduced the number of breaches of drugs coming into the country significantly through these efforts. But exactly how much is still coming through, who may be responsible on the other end and what is being done about it, I will have to get for you for the record.

[The information follows:]

Information received from Customs indicates that there have been *six* commercial aircraft seizures since 1984 and none seized since September 1990. Customs did not provide specific dates, aircraft, type, and airline companies. Speculation as to which air carriers had aircraft seized/detained were: Eastern, Avianca, TACA, Varig, ACES. However, this information should be authenticated with the U.S. Customs Service.

DRUG SEIZURES OF AIRCRAFT

Mr. WOLF. Are we still seizing the aircraft? Has there been any airplane seized in the last five years?

Mr. STEELE. Of course, we didn't do the seizures ourselves.

Mr. WOLF. The U.S. Government did. We did.

Mr. STEELE. That is correct. I have not heard of one, except for Eastern Airlines.

Mr. WOLF. My sense is this has kind of gone off the screen and people are just kind of accepting what is out there. My sense is this is still a major problem. I think if the enforcement were heightened somewhat, and I am not even hearing in the press of this problem, and maybe that is because you are not finding the flowers coming up from Columbia anymore, but certainly the drugs are available on the street.

The use of drugs by high school kids has increased, the use of cocaine is going up in certain areas, so obviously the drug is coming in. It could be coming—if you believe Admiral Kime, nothing is coming in from the water, and if you believe Customs, nothing's coming in from the land. So, therefore, it has got to be coming in from the air. But then I just think it is a problem, and I think we have kind of gotten so used to it that maybe we are not focusing on it.

This may be the time to go back and spin the plate and find what company's airlines are doing a good job. Nobody can do a perfect job. But we should check to find that whether there is a laxity and we are just checking a form off and not really aggressively trying to do something about it. So if you could let me know or let the committee know, I would appreciate it.

Mr. STEELE. I certainly will. But I would just tell you that if you listen to the vice presidents of security for the various air carriers,

the major air carriers, this is a very, very large hammer hanging over their head and they take this very, very seriously.

Mr. WOLF. Oh, I know they do, and I think the American carriers do a good job. I am not suggesting that they are not.

Mr. STEELE. And I know that it has also applied to the foreign side as well. So I would be surprised if we hadn't seen that that has not tightened up. They certainly haven't shut it off. But I don't see, or what I hear, any major deterioration on that one.

POLITICAL ASYLUM FOR NON-DOCUMENTED FOREIGNERS

Mr. WOLF. Just give us a list of the seizures over the last year. And the last thing, without asking the question, if you would look at this and get back to the committee. Congressman McCollum has a bill, and I am a cosponsor, to cut down on the number of nondocumented or falsely documented foreigners who enter the country with fake passports.

They get in, they claim political asylum once they are here, and several just fade into the woodwork. One of the characters involved in the World Trade bombing entered this way. All you have to do is when you hit the airport, just say political asylum.

Now we want to be open for political asylum, I mean that is why this is such a great country, we have been available for people that are leaving totalitarian governments from Castro to Mogadishu in Ethiopia, to the Soviet Union. But I also am concerned that now we are being so overwhelmed by it that airports are just bombarded, Orlando, Kennedy.

And if you just take a look to see, I know this is not the FAA's responsibility, but what you think we could do? And I will give you the copy of the McCollum bill, and give us your best comments, I would appreciate that.

Mr. DEL BALZO. We will do that.

[The information follows:]

The FAA is responsible for safety and security of civil aviation.

The FAA has no role in (and has promulgated no regulations) imposing any responsibilities on air carriers to ensure that passengers have appropriate travel documents before boarding, either inbound to or outbound from the United States.

Ensuring compliance with immigration law by persons entering the United States on air carriers, through U.S. airports, is the responsibility of the Immigration and Naturalization Service of the Department of Justice.

In brief, the INS's basic statute imposes fines and other liabilities on carriers that bring persons to the United States without necessary documentation (passports and visas, where required). The statutory fine is \$3000, with strict liability 18 U.S.C. §§ 1323-1327.

The carrier is also responsible for custody costs in the case of (1) crew members, (2) stowaways, and (3) transit passengers without visas. The INS is responsible for custody costs of all others. In addition, the carrier is responsible for return transportation once deportation of exclusion has been ordered.

A common abuse is the practice of boarding an aircraft with either genuine or fraudulent tourist visas and destroying them in flight (typically by flusing through toilet), then turning up at immigration without documents.

The nearest area in which FAA responsibilities and authorities touch on the problem would be the collateral effect that FAA-mandated airport and air carrier security measures have in ensuring that passengers go through immigration processing.

The FAA is always interested in improving coordination with other federal agencies having responsibilities for aspects of air transportation.

Mr. WOLF. Thank you, Mr. Chairman.

Mr. CARR. Thank you, Mr. Wolf.

Mr. Wolf brought up the question of bogus parts. And I want to ask just a couple questions on that. But I also would like to indicate that we have now been in constant hearings for about 3 hours and 55 minutes. While you haven't been witnesses for that long, I think what we will do is at 1 o'clock we will take about a one hour break. That is my intention, if we can.

I know the gentleman from Virginia has some appointments this afternoon. But what I was hoping would be that we could get through airports and operations today, leave facilities and equipment, and research engineering and development for tomorrow, and conclude by noon tomorrow. But I don't want to unfairly disadvantage the gentleman from Virginia.

What would you think of that schedule?

Mr. WOLF. Well, that is okay. I may not be here the whole time. What I will try to do is to have one or two of the appointments come over here. One is a big group that I love to meet in my office, but I will try to be here.

What time do you think you would go to?

Mr. CARR. Well, we will go until we complete that. And probably put a time limit of five or six on it. I don't think we should go that long. But we do have a number of questions on airports

Mr. WOLF. I will try to be here the best I can.

SUSPECTED UNAPPROVED PARTS

Mr. CARR. Okay. Well, if you have no objection, I think I will announce that as the schedule and that will give everybody a little chance to stand up and stretch.

Let me ask these two questions on bogus parts, Mr. Broderick.

You seemed to indicate it is really not a problem. Now, that kind of troubles me. And I should say that I use the term "undocumented parts," we really shouldn't use the term "bogus parts," but they are undocumented, we have to assume if there is no documentation with them, that they do not pass certain standards. And it has been pointed out that no aircraft accident has been traced to an undocumented part.

Yet, the IG, believing in the law and believing that standards and documentation are there for a purpose, is going after this issue. And we all know the results. She has, in fact, just recently got a conviction.

Apparently the FAA discovered that about 40 percent of the aircraft parts in the FAA's own inventory were undocumented. And now, this is after the same occurrence happened several years ago, when they went in and took a handful of parts and figured out that they were undocumented.

Now, it seems that the FAA, or at least policy-makers, can't have it both ways. Either we are requiring too much documentation, accountability, standardization and standards on parts, and we really shouldn't be doing that, because we don't need to. Or we have got documentation, we've got standards, and they are there for a reason and must be vigorously enforced and therefore lack of documentation is a problem. Which is it?

Mr. BRODERICK. You raise good points. Let me first—

Mr. CARR. Chairmen always raise good points. I understand that. That is a definitional problem.

Mr. BRODERICK. Let me first make sure that I am not misunderstood. I do not mean that bogus parts, or unapproved parts or undocumented parts, and I like your term, are not a problem. What I said was it is not a safety problem and we will not allow it to become a safety problem.

There is a big difference between a safety problem and a documentation problem. What we have, in the case of suspected unapproved parts, is a situation in which the Inspector General has applied some extraordinarily rigorous standards to the documentation requirements, in their eyes, that should be followed for parts. These are standards that were not historically applied by the FAA, not historically applied by the industry. That means that when you now evaluate whether or not we have got a lot of parts which are undocumented, untraceable, in accordance with that new standard of application of the rules, we have in fact identified a large number of them.

We are right now trying to work with industry, with the Inspector General, and with manufacturers and operators to ensure that we can have the proper balance of documentation and safety, so that we do not overburden people with reams and reams of paper, for parts that are not critical, but yet in fact continue to require strict and rigid adherence to safety requirements for parts whose proper functioning is critical. And it is a difficult thing to do all at once.

We are talking about literally billions of dollars worth of parts and inventory, for a couple of hundred thousand airplanes in the United States.

STANDARDS FOR DOCUMENTATION OF AIRCRAFT PARTS

Mr. CARR. Well, then you are saying, you have two problems: the standards for the parts themselves, and the standards for the documentation?

Mr. BRODERICK. That is correct.

Mr. CARR. And you are saying that part of the problem is in the standard for documentation.

Mr. BRODERICK. A large part, the largest part, I think, of the problem that we have seen, "problem," in quotes, that we have seen with the unapproved parts, is documentation. That doesn't mean that there are not people who are out there counterfeiting parts and willingly violating the regulations. We abhor that. We are working closely with the IG and other agencies to apprehend and prosecute those people. That can't be tolerated, as you recognize.

But there are two different things between somebody who willingly counterfeits; for example, knowingly counterfeits a part for a turbine engine that is a critical part, on the one hand; and someone who doesn't have the appropriate documentation to prove to someone that they bought this part from an appropriate manufacturer. Those are two different issues.

Mr. CARR. Well, is there something that can be done to ease the paperwork burden and still—either operationally or in a technological way, is there a way to—

Mr. BRODERICK. We are working right now with users on several different levels. One of the things that Mr. Wolf mentioned is the certification of brokers or suppliers. What we are doing is encouraging people in the industry to adopt a third-party system. We would in fact recognize and give special enforcement consideration to the use of that kind of system.

In other words, if on a voluntary basis a third-party accreditation of a supplier program were adopted and you as a repair station purchased parts from them, we would recognize that you had done your duty and that the supplier is a qualified one.

Mr. CARR. All right. We will take a one hour recess. And like I said, Mr. Del Balzo, folks dealing with F&E and R&D won't, by this Member of Congress, need to be here.

You may want them here. We are going to try to complete airports and operations today, so that your airports and operations people can more productively schedule their tomorrow.

Mr. DEL BALZO. Yes, sir, thank you.

Mr. CARR. All right. Thank you.

IG AUDITS ON USE OF AIRPORT REVENUE

Mr. CARR. We will resume our hearing on the budget of the Federal Aviation Administration and turn to some important issues relating to airports and their operations and their financing. We have become concerned, Mr. Del Balzo, about what seems to be a growing trend for States and cities to attempt to siphon off airport revenues to pay for general municipal services off the airport.

All of us with responsibility over the budget would like to find outside sources for revenue to lessen the requirement for our own discipline, but it appears that the pressure is being felt very acutely at the airport level and in a way then, if that is a successful strategy on the part of airport owners, authorities, essentially the airline customers, the airlines, the U.S. taxpayers end up subsidizing the general services of a municipal government somewhere across the country.

It is hard for the airport itself to maximize its resources when the city or authority that owns it is trying to move those resources off the airport. To what extent do you agree that this is a problem?

Mr. DEL BALZO. I agree that it is a concern, a concern that I think we are sensitive to. I think you have known airports must use revenue for capital and operating costs. FAA inspections are required every four years to ensure that that happens. What we do at FAA is rely very heavily on sponsor self-certification that, in fact, is happening. We rely heavily on IG audits and on audits that are conducted by the sponsor under contract.

There is a requirement for public agencies, that receive more than \$100,000 a year in grants, to do a yearly independent audit. What we have done is we have provided guidance to the auditors as to the kinds of things that we are looking for. I think we monitor that as closely as we can the way we are doing it. We are not staffed to do our own audits with our own people every four years.

That burden is just too much for us. We are attempting to get this done in other ways.

Mr. CARR. Well, the Inspector General is doing a fairly serious job of this and doing so at the request of this Committee. The IG read us a list this year of airports which don't maximize their revenue, either because the funds are diverted by the city or State, or because they lose rental opportunities that they have due to poor management, and all of these airports, of course, receive AIP funds.

Maybe we should award discretionary grants to an airport only if they certify that revenues have not been diverted off airport and that rental revenues are being aggressively managed. What do you think of that idea?

Mr. DEL BALZO. Mr. Chairman, I think that is something that is worth considering. I think it could be an attractive alternative. In fact, airport operators today are required to ensure that airport revenue is used for the right purposes on the airport, both for capital and operating costs. So having that as a requirement or a condition of an airport grant I think would make sense.

IG AUDITS ON USE OF AIRPORT REVENUE

Mr. CARR. As I said, we asked the Inspector General to look at some of these airports and I would like to go through the list that we received from Mr. DeCarli of the Inspector General's office, to see if you have been able to contact these airports and give us some insight.

They looked at Salt Lake City, incidentally, and found no problems whatsoever. I think those airports that are doing a good job ought to be named and given a pat on the back. Dallas-Forth Worth was examined extensively and had no problems. Palm Springs, California apparently had a diversion of \$91,000 and a lost rent opportunity of about \$800,000. Has FAA contacted Palm Springs and had a conversation with them about this?

Mr. DEL BALZO. I would ask Mr. Taylor to reply.

Mr. TAYLOR. Mr. Chairman, indeed we have. We have spoken to the Office of the Inspector General in terms of their draft report and now final report. We have spoken with the officials at Palm Springs. We have reexamined the history of those arrangements there, including land appraisals and agreements with the City of Palm Springs.

We find that perhaps the folks at Palm Springs had been to a degree misguided by interpretations in terms of land prices, appraisal values and how much monies they could divert, if you will, or at least afford the city for services provided by the city.

The issue has not yet reached closure but we are fairly close to it. We have also had the Secretary of Transportation visit with those same people on the same subject.

Mr. CARR. The IG cited that New Orleans had a lost rent of about \$93,000. Do you have any information about that? Has that been closed?

Mr. TAYLOR. That is pending. I believe that the problem there relates to, again, the appraisal value of the properties involved.

Mr. CARR. How about St. Louis, Missouri, \$700,000 annually?

Mr. TAYLOR. St. Louis is a problem with some age attached to it. I believe it relates to an agreement reached between the airport authority and the City of St. Louis such that 5 percent, I believe is the number, of revenues might be returned to the city for services rendered.

Mr. CARR. Might these be for police? What kind of services are they?

Mr. TAYLOR. I am not aware of that detail. I would be happy to take a look into it deeper.

Mr. CARR. If you could for us. The Logan Airport, incidentally, in Massachusetts, had no problem. The IG has stated that the Oakland, California, Airport had some problems but apparently, at the time they testified, which was March of this year they weren't willing to assign a dollar figure to it.

Do you have any update on the Oakland, California problem?

Mr. TAYLOR. I do not, no not today.

Mr. CARR. If you might get some and submit it for the record. It may have been resolved. Orlando, Florida, about \$760,000 in rental lost. Have you—

Mr. TAYLOR. I don't have that detail but I would be happy to take a look into it.

Mr. CARR. All right. And that is an annual figure. All of these are annual figures. Palm Beach, Florida, had no problems according to the IG on this particular ground. Pompano Beach, Florida, however, had a—\$200,000 in diversion to the city and about \$1 million annual lost rent. Are you familiar with that one?

Mr. TAYLOR. Yes, I am.

Mr. CARR. Can you tell us about that?

Mr. TAYLOR. Just a bit. That is long of tooth. It is a very, very old problem. It is at least ten years old. At least seven years ago, the Office of the Inspector General, at our request, conducted an audit or a survey of the financing of that airport and its relationship to the City of Pompano. They did find that improper amounts of money had been taken from the airport reserve fund and moved into the city coffers, again, at an improper level.

We engaged the City then in finding that out and caused restoration of those monies back into the airport reserve fund. We have reached agreement with the present mayor, with the present council, and among other airport interests, and I had thought even with the Office of the Inspector General, that we had solved that problem.

Mr. CARR. Broward County, Florida, had a \$100,000 annual diversion and \$2.1 million in rent. Are you familiar with that one?

Mr. TAYLOR. I am not.

Mr. CARR. Maybe you could give that to us for the record. Memphis, Shelby, Tennessee, had a \$630,000 annual lost rent. Are you familiar with that?

Mr. TAYLOR. Vaguely familiar but I don't want to guess at the details, if you will allow me.

Mr. CARR. Give us something for the record.

[The information follows:]

Palm Springs, CA Airport:

The IG issued its final report on March 4, 1993. There were three recommendations for FAA to require the sponsor to establish a fair market rental of Federal surplus property, to refund fee payments made to the City's general fund and to increase monitoring of the sponsor to ensure compliance with its grant obligations.

The FAA partially concurred with 2 of the recommendations, dealing with establishing fair market rental value and refunding fee payments made to the City with supportable documentation. The FAA non concurred with the recommendation to increase monitoring of the sponsor to ensure compliance with its grant obligations.

The New Orleans Aviation Board (NOAB) operates New Orleans International Airport (Moisant). The OIG performed a revenue audit on the Aviation Board, with the final report being issued on February 2, 1993. The OIG audit revealed that the airport's internal controls were adequate to ensure airport revenues were used only for airport purposes. However, the sponsors did not maintain a fee and rental structure which made the airport as self-sustaining as possible.

It found that the airport charged the city of Kenner, Louisiana, only \$1.00 per year for the use of 668,250 square feet of unimproved airport land with an estimated annual fair market rental of \$93,500. The OIG report recommended that the FAA: (1) ensure the sponsors establish fair market rental rates for airport land used by the city of Kenner; and (2) increase monitoring efforts of the sponsors to ensure compliance with AAIA Section 511(a)(9).

We partially concurred with the OIG's findings and the FAA, Southwest Region, Airports Division: (a) provided the sponsor with the additional guidance necessary to understand and comply fully with its obligations under the AAIA, Section 511(a)(9); and (b) directed the sponsor to assess fair market rental value for all airport property used for nonaeronautical purposes, including the property leased to the city.

We did not concur with the rental income calculations cited in the report (\$94,500). The fair market rental value for unimproved airport property in excess of that required for aeronautical purposes depends on the local real estate market. Consistent with FAA policy, we will leave the negotiation of the rental rates for such property to the business judgment of the sponsor.

In order to obtain better use of revenues, we have instructed the airport to enter into acceptable agreements or leases to obtain fair market rental no later than July 1, 1993.

We believe this item is in reference to the OIG audit performed on revenue accountability at Lambert-St. Louis International Airport, with a final report issued on April 12, 1993.

In this audit, the OIG reported that as a result of their audit, \$762,000 was deposited into the Airport Revenue Fund on June 3, 1992, but that an additional \$2.1 million of commission payments earned on public telephones located at the Airport was deposited in the Sponsor's General Fund instead of the Airport Revenue Fund. Accordingly, OIG recommended that FAA require the Sponsor to refund \$2.4 million (\$2.1 million for AT&T commissions plus \$300,000 in lost interest income) to the Airport Revenue Fund. A copy of FAA's response to the draft audit report, dated March 10, 1993, is attached.

As agreed to in the response to the draft report, FAA sent a letter to St. Louis on March 1, 1993 notifying the sponsor that the City of St. Louis must transfer \$2.4 million to the Airport Revenue Fund from the General Fund, and if evidence of such transfer was not received before the issuance of the next discretionary-funded grant project to the City of St. Louis, a special condition would be included in that grant agreement, precluding any payment of the federal share of the project, pending our determination that this requirement has been satisfied.

According to a letter from the St. Louis Office of the Mayor to Congressman Richard Durbin, dated March 18, 1993, (copy attached) a check for \$762,299.00 went to the airport's account in June 1992 for revenue from AT&T telephones on the airport, and stated that the City was in the process of negotiating an orderly reimbursement of the contested amount (\$2.4 million).

On April 13, 1993, the Deputy City Counselor for the City of St. Louis asked for copies of the auditor's supporting documentation and that this finding be reconsidered or held in abeyance until they had an opportunity to review the supporting documentation.

FAA forwarded the supporting documentation to the City of St. Louis on May 5, 1993, and responded that we did not feel that there is adequate justification for the reconsideration or delay of the corrective action identified, and the requirement for satisfactory evidence of the transfer of \$2.4 million remains in effect.

On March 18, 1993, the FAA responded to the OIG's draft on Oakland. The OIG had recommended that FAA require the sponsor to collect \$686,000 due the airport from allegedly undercharging an airline for hangar space and for failure to obtain fair market rental value from the operation of a golf course. Additionally, the OIG recommended that FAA require the airport sponsor ensure that the City documents the cost of services provided that airport and seek reimbursement for any services which can not be documented. The last recommendation required FAA to increase monitoring efforts to ensure the airport complies with its obligations concerning use of revenue.

We concurred or partially concurred in the recommendations requiring the collection of unpaid hangar rent, seeking reimbursement for the operation of the golf course, and seeking refund of monies paid to the City for which no documented services were provided. We non concurred in the recommendation dealing with increasing FAA's monitoring efforts.

To date we have not received the Final Report from the IG.

The Greater Orlando Aviation Authority (GOAA) operates the Orlando International Airport and the Orlando Executive Airport. The OIG performed a revenue accountability audit of the GOAA, with the final report being issued on December 29, 1992. In this audit, the OIG evaluated 67 of the Authority's secondary ground leases. Landing fees and main terminal leases were excluded from the OIG's evaluation. In their evaluation of leased parcels of land, the OIG estimated that the Authority did not recover the fair rental value of the leased assets in 22 of the 67 leases. OIG estimated the revenue from these 22 leases at \$3,973,173. The GOAA received \$1,675,187 in rent from the 22 leases. Therefore, the OIG estimates that the GOAA did not recover \$2,297,986 in rental revenue.

OIG recommended that FAA require the Authority to:

1. Develop and implement property management procedures consistent with the revenue requirements of the Capacity Expansion Act and the Surplus Property Act.
2. Establish by appraisal the FMV and fair rental value of all Surplus Property Act donated land used for non-aviation purposes and to adjust lease rental amounts accordingly.

In the draft audit report, OIG recommended that FAA suspend discretionary grants to the sponsor until property management controls were implemented. Prior to the issuance of the final report, the Authority presented supplemental data that led OIG to adjust the under recovery of rent calculations. Since the Authority has taken immediate action to implement property management controls, OIG no longer recommended that FAA suspend discretionary grants.

The City of Pompano Beach operates the Pompano Beach Airpark. The OIG performed a revenue accountability audit of the city, with the final report being issued on April 3, 1992. In this audit, the OIG determined that the City of Pompano Beach did not comply with the FAA's airport revenue accountability requirements. The city did not pay the airport fund the required fair rental value for their own non-aviation use of federally donated airport land. OIG found that the city owed the airport fund \$6.2 million for their non-aviation use of airport property. The city also used airport revenue for non-aviation purposes. The OIG identified airport fund expenditures of \$298,331 for non-aviation related purposes, and unsupported expenditures of \$905,930 from the airport fund.

OIG's audit report recommended that FAA require the City of Pompano Beach to (1) repay the back-rent owed to the airport fund for the city's non-aviation use of the airport property, (2) either purchase for FMV or pay the appraised fair rental value for the airport land for all future non-aviation uses of the property, (3) repay these costs to the airport fund, (4) develop documentation to support the unsupported cost or repay these costs to the airport fund, (5) develop internal controls to ensure the city complied with FAA's airport revenue accountability requirements, or (6) comply with the land use agreement entered into with the FAA covering the city's use of airport land.

The audit recommended that FAA deny the city's request to divert airport revenue because of past compliance problems. FAA's goal is to ensure full compliance and maintain a reasonable amount of revenue in the airport fund to operate and maintain the airport. An agreement has been executed between the City of Pompano Beach and the FAA which assures that the airport master plan will be followed and that all recommended development will be accomplished; it assures that maintenance and security will be equal to or better than similar airports in the state; and it will provide fire protection at no cost. The city will also waive its eligibility for future AIP grants and will provide annual financial data and audits to the FAA.

The Broward County Aviation Department (BCAD) operates the Fort Lauderdale-Hollywood International Airport and the North Perry Airport. The OIG performed a revenue accountability audit of Broward County, with the final report being issued on April 24, 1992. In this audit, the OIG evaluated all 35 of the county's secondary ground leases. Landing fees and main terminal leases were excluded from the OIG's evaluation. In their evaluation of leased parcels of land, the OIG estimated that the county did not recover the fair rental value of the leased assets in 24 of the 35 leases. OIG estimated the revenue from these 35 leases at \$7,585,100. Broward County received \$3,916,703 in rent from the 35 leases. Therefore, the OIG estimates that the Broward County did not recover \$3,668,397 in rental revenue. The OIG found that 162.7 acres of vacant land could be used to generate revenue for the airports. They also found that \$596,624 had been paid from airport revenue for non-aviation expenses.

Recommendations in the OIG's audit report are:

A1. Suspend future discretionary grants to Broward County until it develops and implements property management and marketing in controls consistent with the revenue requirements of the Capacity Expansion Act and the Surplus Property Act to ensure leased resources are rented at market rates and vacant property is proactively marketed to produce revenue.

A2. Require the county to reimburse the airport fund \$325,078 for the land leased by county agencies for less than fair market rental.

A3. Require Broward County to establish by appraisal the FMV and fair rental value of all Surplus Property Act donated land used for non-aviation purposes and to adjust lease rental amounts accordingly.

B1. Require Broward County to reimburse the airport fund \$596,624 expended to reimburse the City of Dania for lost tax revenue.

Recommendations A1 and A3 have been resolved. We are continuing to work with Broward County on the reimbursements recommended in A2 and B1. The county is currently preparing an action plan for these recommendations.

The Memphis-Shelby County Airport Authority (MSCAA) operates the following three airports: Memphis International Airport; Charles W. Baker Airport; and General DeWitt Spain Airport. The OIG performed a revenue accountability audit of the MSCAA, with the final report being issued on August 12, 1992. In this audit, the OIG evaluated 25 of the Authority's 45 secondary ground leases. Landing fees and main terminal leases were excluded from the OIG's evaluation. In their evaluation of leased parcels of land, the OIG estimated that the Authority did not recover the fair rental value of the leased assets in 14 of the 25 leases. OIG estimated the revenue from these 14 leases at \$2,515,863. The MSCAA received \$631,384 in rent from the 14 leases. Therefore, the OIG estimates that the MSCAA did not recover \$1,884,479 in rental revenue.

Recommendations in the OIG's final audit report are:

1. Suspend future discretionary grants to the Authority until it develops and implements property management and marketing in controls consistent with the revenue requirements of the Capacity Expansion Act and the Surplus Property Act to ensure leased resources are rented at market rates.
2. Require the Authority to establish by appraisal the FMV and fair rental value of all Surplus Property Act donated land used for non-aviation purposes and to adjust amounts accordingly.
3. Require the Authority to establish by appraisal the FMV and fair rental value of all grant acquired land not needed for aviation purposes and either sell such land for appraised FMV or lease for fair rental value.

In March 1993, we advised OIG: (1) that the Authority has now included appropriate formal controls and procedures into their policies and procedures manual; (2) that the Authority will follow OIG recommendation number 2 as soon as existing lease contracts expire, and (3) that the Authority is actively selling or leasing grant acquired land not needed for aviation purposes at FMV.

IG AUDITS ON USE OF AIRPORT REVENUES

Mr. CARR. Nashville, Tennessee, was examined and the IG found that there were no problems there.

Hillsborough County, Florida, had a \$1.3 million in annual lost rent. Any knowledge of that one?

Mr. TAYLOR. No, sir.

Mr. CARR. Dade County, Florida, had a \$4.8 million in diversion. Now, that is a big one.

Mr. TAYLOR. You will have to help me there. Well, let me take a look into it. I am wondering what the diversion was directed at.

Mr. CARR. Well, if you would and you would get back to us, that is a very large item. Dade County and Miami International Airport are large recipients of funds in the past. Anyway, they have frequently received help from this Committee and we would like to know what the status of their matter is with the FAA.

The IG told us that Hartsville, Atlanta, had only procedural problems and there were no lost funds. And Houston had a \$300,000 in diversion. Are you familiar with that?

Mr. TAYLOR. I am not.

Mr. CARR. Well, perhaps you could give us some details on that as well. As I said, the Inspector General, at the request of the Committee, has undertaken these investigations and they will be continuing this process and contacting other airports in the future.

The fact that no one was investigated or no one was named doesn't mean that there were no problems. This is something that the Committee has a continuing interest in and would solicit the help of the FAA. We have scarce resources and though the local incentives are very, very high, the law really must be enforced. We get disturbed when we read about various local officials or local candidates for office make suggestions that the airport is somehow or other not paying—is not benefiting the city's general services coffers enough.

[The information follows:]

The Hillsborough County Aviation (HCAA) operates the following four airports: Tampa International; Peter O. Knight; Plant City; and Vandenburg. The OIG performed a revenue accountability audit of the HCAA, with the final report being issued on November 17, 1992. In this audit, the OIG evaluated 36 of the Authority's 40 secondary ground leases at Tampa International Airport. Landing fees and main terminal leases were excluded from the OIG's evaluation. In their evaluation of leased parcels of land, the OIG estimated that the Authority did not recover the fair rental value of the leased assets in 28 of the 36 leases. OIG estimated the revenue from these 28 leases at \$7,400,526. The HCAA received \$3,416,226 in rent from the 28 leases. Therefore, the OIG estimates that the HCAA did not recover \$3,984,300 in rental revenue.

Recommendations in the OIG's audit report are:

1. Suspend future discretionary grants to the Authority until it develops and implements property management and marketing in controls consistent with the revenue requirements of the Capacity Expansion Act and the Surplus Property Act to ensure leased resources are rented at market rates.
2. Require the Authority to establish by appraisal the FMV and fair rental value of all Surplus Property Act donated land used for non-aviation purposes and to adjust lease rental amounts accordingly.

In the final audit report, the OIG agreed with the corrective actions taken and planned by the FAA and the Authority. The Authority reviewed and amended leasing policies in November 1992 in accordance with our October 21 letter.

The Dade County Aviation Department (DCAD) operates the following six airports: Miami International; Opa-Locks; Tamiami; Homestead; Opa-Locka West; and the Training & Transition Airport. The OIG performed a revenue accountability audit of the DCAD, with the final report being issued on October 26, 1992. In this audit, the OIG evaluated 30 of the Aviation Department's 182 secondary ground leases. Landing fees and main terminal leases were excluded from the OIG's evaluation. In their evaluation of leased parcels of land, the OIG determined that the Aviation Department had an effective property management internal control structure. However, OIG found that the Aviation Department did not restrict the use of airport generated revenue solely for airport capital and operating expenses. They questioned \$2.7 million in non-airport related expenses and \$27.7 million of indirect costs charged to the airport fund and reimbursed to Dade County without an approved cost allocation plan.

OIG's audit report recommended that FAA require Dade County to:

1. Reimburse the Aviation Department's airport fund for non-airport expenditures from the General Publicity, Advertising and Promotions accounts.
2. Reimburse \$1,555,183 to the airport fund for the non-airport equity transfers from the Airport Development Fund (ADF), cancel the planned transfer of an additional \$431,000 budgeted for the end of FY 92, and cease such transfers from the ADF unless for specific airport purposes approved by FAA.
3. Either obtain an independent audit of the indirect cost allocation plan or reimburse the airport fund \$27.7 million for the unsupported indirect cost charged.

In April 1993, Dade County provided additional information/justification concerning the non-airport expenditures in recommendations #1 and #2. We are continuing to review the information submitted by Dade County and expect to meet with them in early May to discuss this matter. The recommended independent audit is underway and is expected to be completed in July 1993.

The FAA, in cooperation with the city of Atlanta has resolved most of the questions posed by the OIG in its Atlanta audit. The resolutions are as follow:

On March 12, 1993, the FAA and the city reached the following agreement:

Exclude the 3,000 single-family residences included in the 65 Ldn under the approved noise exposure map, but not included in a grant, from any financial compensation for an easement. (Savings - 3,000 homes x average cost of an easement \$10,162 = \$30.5 million).

Revise the noise contours prepared for the environmental assessment report on the commuter runway as updated Part 150 noise exposure maps for approval within three months. This will eliminate 3,000 single-family residences that are currently in the 65 Ldn from being eligible for soundproofing. (Savings 3,000 homes x average cost of soundproofing \$5,114 = \$15.3 million).

The audit report stated that future development on vacant land zoned for residential use located in the noise impacted area could increase the final noise program cost between \$202.4 million and \$959.2 million should the sponsor be required to apply acoustical treatment and aeronautical easement measures. On October 2, 1992, we notified the city of Atlanta that FAA would not participate in soundproofing residential development constructed after April 10, 1985, the approval date of the noise compatibility program.

The audit report stated that "State and Local Governments and Planning Agencies must provide for land use planning and development, zoning, and housing regulations that will limit the uses of land near airports to purposes compatible with airport operations." Since 1985, 437 residential units have been constructed in the noise impacted area. As stated above, we advised the city that we would not participate in any costs associated with these residential units.

We support zoning and land use controls. However, most of this property is surrounded by residential use. It would be difficult, if not impossible, to spot zone vacant land in proximity to residential development for industrial or commercial use. The contiguous property owners would fight any zoning change in their residential area. The better solution would be to require, by building code, soundproofing of new residential development in the noise impacted area. At Atlanta the situation is resolved since we notified the city that we would no longer participate in soundproofing or easements of homes constructed after April 10, 1985.

We need to adopt a policy and notify all sponsors that FAA will not participate in soundproofing of homes constructed after the noise exposure maps have been published.

Houston Aviation Department:

The city of Houston Aviation Department operates and maintains the following three airports: Houston Intercontinental Airport, William P. Hobby Airport, and Ellington Field Airport.

The OIG performed a general compliance audit to determine whether the Department of Aviation administered the Airport Improvement Program projects in accordance with FAA grant requirements. One of the findings included in-house labor (force account) accomplished by city employees. The Department did not have adequate documentation to support these claims. Due to the lack of adequate documentation, the total cost was questioned. At the time of the audit, supporting records were not available at city hall and, subsequently, these questioned costs have been determined to be eligible.

All questioned costs in the Houston audit have been resolved as of this date.

LONG-TERM LEASE OF LOS ANGELES AIRPORT (LAX)

Mr. CARR. And most recently, there is a candidate for mayor in the City of Los Angeles, who has proposed that LAX, the huge Los Angeles International Airport, be leased on a long-term basis and that the money from the lease be used to hire 1,000 extra police officers.

Now, while I am sure all of us would love to have 1,000 extra police officers in our community, do you have any notion about whether such a scheme would be even legal under Federal law?

Mr. TAYLOR. I don't think so.

Mr. CARR. It will not be. In fact, the City of Los Angeles, I believe, had a referendum where the voters themselves spoke about the airport in an attempt to take revenue off the airport for local services and similarly that referendum is not lawful. Is that right?

Mr. TAYLOR. That is my understanding.

[The information follows:]

To our knowledge, there is no IG report on file addressing the subject matter. However, until we actually have the City's proposal and had a chance to study it, we could not pass on its legality.

DIVERSION OF AIRPORT FUNDS AT HONOLULU AIRPORT

Mr. CARR. One final matter, and this is one with a long history to it and I wonder if there has been any update. Apparently the State of Hawaii diverts funds from Honolulu Airport but does so under a grandfather provision. Are you familiar with that case?

Mr. TAYLOR. Somewhat.

Mr. CARR. Can you tell us what the status of that is? That has been an ongoing discussion I understand.

Mr. TAYLOR. I believe that the grandfather provision allows the State, which is actually the airport sponsor, to receive revenues which ordinarily would be plowed back into the airport for services rendered by the State in support of the airport.

I don't know of the year in which the grandfathering took effect, but I do know that the State itself had proposed that. The issue is also related to an issue of two years of age relating to the use of an off-airport concession. The State as well as the airport argued at one time that revenues generated by that off-airport concession could be used for State purposes, being that the revenues were not generated by the airport.

We have been at odds with the State, with the airport itself, and with a number of people regarding various interpretations of law on that particular subject. I am not aware as to how it was finally concluded.

Mr. CARR. Do you know if it has been concluded?

Mr. TAYLOR. I don't think so.

Mr. CARR. You don't think so. I would think that it would be very important to put a time line on concluding that issue. The State of Hawaii and Honolulu are before this committee requesting help for their airport, for their mass transit, for a whole host of things, and this diversion issue is very important to the committee and it would be most helpful to know that this particular problem had been resolved one way or the other.

I am not trying to be prejudicial here against the State of Hawaii, but, I mean, if they have a legal framework, essentially a legal excuse, to divert funds from the airport, then whether we like it or not, we will have to rest with it. But I think we really need to resolve that issue in a timely fashion, so perhaps you could get back to us on what the time line is for resolving that, and, again, I would hope that we wouldn't drag it out because it will inhibit our ability to help the State of Hawaii in other matters that are unrelated to the airport if this issue is not resolved.

Mr. TAYLOR. We will satisfy you quickly on that issue.

[The information follows:]

Legal counsel for the Office of DOT Inspector General issued a preliminary opinion that the State of Hawaii was diverting funds from the airport in violation of assurances in the State's airport grant agreements. The State has submitted a legal memorandum arguing that the diversion is "grandfathered" under provisions of the Airport and Airway Improvement Act of 1982. The FAA and the DOT OIG expect to issue a final decision on the matter by May 31.

PASSENGER FACILITY CHARGES

Mr. CARR. Okay, thank you.

Let's talk about another favorite subject of mine, passenger facility charges or PFCs. As you know, I have serious concerns about the way passenger facility charges are being approved. The FAA is in a difficult position on this, I understand.

For those of us who think that passenger facility charges are not wise public policy, the FAA can't seem to make us happy, because you're approving too many of them. On the other hand, the FAA cites a lot of statistics about how vigorous the FAA has been in turning down inappropriate passenger facilities charges.

As I said earlier in our hearing, today these things are really not passenger facility charges, they are airline facility charges. I have to say that I can't believe the Congress of the United States could have approved a law or a bill that would have been introduced in today's environment saying, let's give local authorities the ability to tax airlines that are losing money hand over fist for their own ends.

I don't believe that would have ever gotten through the Congress of the United States, but yet, that is, it seems, the result and the consequence of the passenger facility charges, which this Member vigorously opposed and voted against but which are now the law.

The other thing is, we just ended up establishing a blue ribbon committee to study the trouble in the airline industry, and I hope they will give a look at evaluating the billions of PFCs that are being imposed on the airlines right now. Let's take a look at one case coming back to LAX.

PFCs AT LOS ANGELES AIRPORT

Mr. CARR. The FAA has recently approved a plan to allow the collection of \$360 million PFCs over the next five years at LAX. What will these funds be used for?

Mr. TAYLOR. I beg your pardon. I don't have that level of detail with me today.

Mr. CARR. Well, we are told that \$150 million will be used for a people mover to carry people to and from the airport. Are you familiar with that at all?

Mr. TAYLOR. Yes, somewhat.

Mr. CARR. My own experience with the people mover in Detroit would cause me to wonder about that project, the feasibility of the people mover concept. Let's move it off the specifics, but I would like a specific response for the record on the LAX thing. They want \$100 million to build a new terminal on the Ontario airport which is 60 miles away. That is another issue.

The law allows them to take these PFC monies off the airport to some other site, some other airport site presumably. And I think the average person who is flying into and out of LAX would be shocked to know that. That is not your problem. That is the problem in the law and the way it was drafted.

At least they would think that they were paying the charge, which today they are not, but even if they were paying the charge, they would be thinking that they would be helping the airport they were flying to and that would be reasonable. Now you find out that you are being charged for an airport that you are not even going to. That seems to me to be stepping away from gaining the trust of the American taxpayer.

But I would ask you to take a look at LAX's proposal because as I said earlier, they are trying to figure out ways to move revenue off the airport.

Mr. TAYLOR. May I speak to those issues, at least superficially?

Mr. CARR. Sure.

Mr. TAYLOR. Regarding the people mover, well, first of all, the Passenger Facility Charge System, is intended to satisfy airport capacity needs, safety needs and security needs but in large part, capacity needs. The people mover system at Los Angeles, I believe, is viewed as a way to add efficiency to the terminal complex there and, thereby, capacity to the terminal complex. It makes it easier to move people in and out and around, and I believe that that is the reason that the passenger facility charges would be applied to that people mover system.

Regarding Ontario, Ontario is a part of the LAX airport system, one of several airports that they own and operate. They believe that they could sufficiently add capacity to their overall system if they could treat not only LAX, but Ontario, as an alternate facility in some forms of travel.

So in that sense, they are not, nor did we view those monies that would be collected, not from the air carriers by the way, but from the flying public, as a means whereby they could add capacity to the system there in the LAX basin area.

Mr. CARR. Well, obviously it makes sense to them. They are proposing it. It is just a question of—and whether—it is legal under the law, but I am wondering if the FAA buys into that logic.

Mr. TAYLOR. We do and did, largely for capacity enhancement reasons, certainly not security, certainly not safety, but for capacity enhancement reasons.

[The information follows:]

On March 26, 1993, a PFC application was approved granting the Los Angeles City Department of Airports authority to collect a PFC for two projects as proposed,

and one project (the new Ontario terminal) with the understanding that the public agency will reconsider the project scope before applying for use approval. The City elected to request only the authority to collect PFC revenue at LAX for an automated people mover system (APM), \$209 million, and a new terminal building at Ontario International Airport (ONT), \$51 million. In addition, the City requested authority to collect at LAX and use PFC for noise mitigation projects at both LAX and ONT. The FAA approved this request as well as a request from the City to collect \$49 million at ONT for new terminal construction at ONT.

A total of \$360 million was approved for collection at LAX for the following three projects: APM system, \$209 million (impose only); New Terminal Building at Ontario International Airport, \$51 million (impose only); and noise mitigation, \$100 million (impose & use). The FAA approved this request with the condition that the City provide an opportunity for further consultation to the air carriers, prior to applying for authority to use PFC revenues for the Ontario Terminal. The APM will operate between the proposed Lot C multi-modal transit center and the central terminal area. The APM will interface with the regional transit system (proposed Green Line) at the transit center.

Mr. CARR. But you just stated that you believe the passengers are paying these charges.

Mr. TAYLOR. They pay it via the \$3 in addition to their ticket tax. Do they not?

PFC PROGRAM IMPLEMENTATION

Mr. CARR. Well, that is the structure of things, but with airlines losing money, with routes being so competitive, airline testimony before this committee is the passengers aren't paying for it. I mean, the airlines aren't recovering their costs of operating.

Mr. TAYLOR. Of administering the system?

Mr. CARR. No.

Mr. TAYLOR. Of operating—

Mr. CARR. Of operating the airlines. They are not recovering their own costs. They are eating the tax, in other words. They are not passing it on to the passengers in this competitive environment of overcapacity in the airlines.

The testimony before this committee, and I think before almost everybody, is that the airlines are eating the tax. They are paying it, the passengers aren't.

Mr. TAYLOR. Now, I believe that as I hear it. However, I am reminded in the construction of the regulation which supports and makes workable the Passenger Facility Charge system, it was imagined that the passenger for each leg of travel would pay approximately \$3 via the purchase of the ticket.

The air carriers would be responsible for the collection of those monies and pass them along to the airport sponsor for projects specifically designed in concert with the airport sponsors, the air carrier, the public and the FAA for specific, very, very specific project use.

That tells me or suggests to me very, very strongly that the passenger which uses a given airport pays the \$3 there. That money is collected by the air carrier, not used by the air carrier but collected by the air carrier, and then in turn passed back to that airport where that Passenger Facility Charge was assessed.

Mr. DEL BALZO. Mr. Chairman, we are faced with a dilemma. Regardless of how one feels about the Passenger Facility Charge, the fact is we have one. FAA is now charged with implementing the Passenger Facility Charge in a way that ensures that money that

is raised through that charge, in fact, goes back into the airport for safety, capacity, security or efficiency reasons.

When I look at the way we have handled the program to date, what I hear from the airlines is we think you have done a good job. We think you have done a good job in disallowing those projects that don't fit what we think is a reasonable test.

They are worried about what we might do tomorrow. We have thought about that too, and I think we would suggest that there are several ways that we could strengthen the Passenger Facility Charge regulation that is now on the books. I don't think it is unreasonable, for example, to require airport owners to ensure or to convince us that every critical safety, security and capacity project has already been met before they come to us with another shopping list of projects to be funded through a Passenger Facility Charge.

I think there are things that we could do in terms of the inter-modal aspect for those projects that now meet PFC criteria. There was a minimum rate for what would come out of our trust fund based upon the amount of usage by passengers that are, in fact, going to or from the airport. I think there are a couple things we could do to tighten it up.

PFC PROGRAM IMPLEMENTATION

Mr. CARR. Do you think you have the authority to require that the airlines approve the facilities that are proposed? Under the law it is only advisory.

Mr. DEL BALZO. We have a requirement to ensure that the air carriers are consulted at two stages in the process. We have a requirement to ensure that the airport operator consults with the air carriers and that the airport operator furnishes FAA a copy of the comments they receive from the air carriers.

There is a second requirement that is levied on FAA. We are required to consult with air carriers in a public process and we have 120 days, as you know, to respond. In every case that has happened. In the Los Angeles case that you just cited, you focused on two projects in that passenger facility application that I think receive the most comment in terms of an unfavorable reaction from the air carriers. Those are two particular projects that I recall that the air carriers were not comfortable in support of.

Mr. CARR. But you didn't disallow them.

Mr. DEL BALZO. Not on those two, no, sir.

Mr. CARR. Were there others that they objected to that you disallowed?

Mr. DEL BALZO. No, those were the only two. As I recall, those were the only two in that grant.

FAA EVALUATION CRITERIA FOR PFC REVENUE

Mr. CARR. Well, does the FAA have any internal criteria to evaluate the potential of PFC revenue to meet either an individual airport's goals or the national goals?

Mr. DEL BALZO. I don't know the answer to that specifically.

Mr. TAYLOR. I can help a bit on that. As a consequence of the FAA's approval of the airport layout plan, we know and have ap-

proved the airport layout plan, and agree with a given airport's development objectives. Where we find reason to disagree or find that particular projects have little or no aeronautical merit, we don't approve those as a part of the airport layout plan.

As we receive requests for Passenger Facility Charge applications, we make absolutely sure that the word "contemplated" is indeed a part of the airport layout plan. So in that sense, yes, we do have, at least in a design and planning sort of way, criteria that we would have met via Passenger Facility Charge applications.

Mr. CARR. Do you think you need more criteria or fewer criteria or you are about right?

Mr. TAYLOR. I think that we are about right with one exception, and that exception was referenced this morning. Perhaps we don't have a sufficient set of criteria, nor a data base to measure the true costs as opposed to the benefits of some on-airport projects.

Mr. CARR. Would you ever think of doing a rate of return analysis?

Mr. TAYLOR. We have thought about that, yes.

PFC AT LAMBERT ST. LOUIS AIRPORT

Mr. CARR. Under a FAA approved PFC at Lambert, St. Louis International Airport, the city of Bridgeton, Missouri, filed suit against the FAA charging that the airport was intending to use the PFC funds to purchase homes that would not meet the Federal definition of noise-affected property.

They claim that the airport would buy the homes, claiming noise impact, then raze them and construct a new runway. In this way, certain environmental reviews normally required under Federal laws would then be avoided, according to the lawsuit.

Is there any merit in Bridgeton's claim and where does the case stand today?

Mr. TAYLOR. We disallowed the PFC application for that purpose.

COLLECTION OF PFCs FOR FREQUENT-FLYERS

Mr. CARR. Last year our bill contained a provision which prohibited the collection of PFCs from passengers traveling or a frequent-flyer benefit. On November 18, 1992, the FAA interpreted the law to apply only to new PFCs approved after the date of enactment and not retroactive to PFCs already approved.

Would you explain how you arrived at that conclusion?

Mr. DEL BALZO. Mr. Chairman, that was our interpretation of the language, but at the same time, we are not enforcing collection of PFCs that were issued before that time. Our interpretation of that language was a very narrow one, I grant you that. Nevertheless, that was our interpretation of the intent of this committee.

PFCs AND INTERMODALISM

Mr. CARR. Well, this Committee, I can tell you, intended it to be for all frequent fliers and hopefully you could adjust yourself accordingly so that we don't have to have future legislative action on that. Like I said, in concluding the area of PFCs, this isn't a problem of the FAA's making, it is a bad law whose time has passed and hopefully we can get out from under it in a respectable way.

It is always fun to tax not you, not me, but the person behind the tree, and that is a lot of what passenger facility charges are. They perform an end run on political discipline, allowing people who have a responsibility to tax without the concomitant responsibility to explain to those who select them why they should be taxed. It also avoids the market discipline because whereas when an airport seeks bonding authority, they have to get the approval of the airlines and there is a joining of the partnership, the joint venture partnership of the airlines and the airport management under the normal procedures. The airlines have relatively more say in what projects go ahead and whether they are grandiose and gold-plated or whether they are needed improvements. The PFCs allow airport authorities to end run that process.

So you don't have political discipline, you don't have market discipline. About the only discipline we have is at the FAA and I don't think you are given frankly enough. I would like to see you have more authority in this area. You have done a couple of good things, I will grant you. The disallowance of the La Guardia request, to take passenger facility charges, or as I call them, airline facility charges, and create nothing but mass transit with it. It had nothing to do with the airport.

I think we are at a point where we have a lot of well-intended airport managers out there and I don't mean to come down on them either because I know most of them personally. They do a fine job, but after all, when you are in charge of an airport, you don't want to go hat in hand to your director of transportation or your mass transit authority and beg them to do the right thing by your airport, which those other folks perceive as making money anyway, but in fact that is what we ought to be asking airport management to do, so that roads are paid for through road money, and transit is paid for through transit money.

This whole notion of intermodalism is a notion of financial intermodalism: How do I finance my mode with your money. It doesn't have a lot to do with intermodal planning. We do intermodal planning, why? Because it makes sense. You don't have to be forced to do that and you don't have to have a bill passed by the Congress and entitled Intermodal Surface Transportation Act to tell you you are supposed to be intermodal. We know that.

What that is about is intermodal financing, and if we don't stand up and fight that, highways and airports are going to be looked upon as targets for diversion and we are going to have less money to do other things.

I also want to say that whatever their virtue, the Passenger Facility Charges never really made it with Wall Street either. Tom Bradshaw, managing director at First Boston, wrote me a letter recently and we had a wonderful conversation about financing all kinds of public works. Our conversation wasn't on airports alone, but in the letter he says, "Moody's makes it explicit that they are precluded from placing an investment grade rating on long-term stand-alone Passenger Facility Charge supported debt, thus diminishing the value of this revenue source for some airports. While this reflects the finance markets focus on the bond holder's risk, not necessarily the project's risk, it is relevant for public policy-

makers, considering which instruments further the goal of making transportation projects as self-sufficient as possible."

So the proponents of Passenger Facility Charges haven't even achieved the goal that they sought there because the bond market doesn't look at PFCs as being a reliable revenue source. And anyway, I am just trying to get the message out to the FAA, I guess, that anywhere you could help reign in this Passenger Facility Charge stuff, we would appreciate it.

NATIONAL PLAN FOR INTEGRATED AIRPORT SYSTEMS (NPIAS)

Mr. CARR. Now, normally we would think that the first step in an effective program is to develop a good plan. The FAA's plan for airport development is called the National Plan for Integrated Airport Systems or NPIAS.

In all candor, this document is more of a reference book than a planning tool. As the General Accounting Office pointed out in its report highlighting transition issues to the new administration, this document has no measurable goals and many view it merely as a wish list because it includes low priority projects at small airports that the FAA will never rank high enough to fund or that the sponsoring airport cannot afford even with Federal assistance.

Do you have any efforts under way to significantly improve the National Plan for Integrated Airport Systems, and if you don't, should the plan be discontinued given its limited usefulness?

Mr. DEL BALZO. Mr. Chairman, this is very hard for me. I agree with GAO. I agree with what they said. We testified about a year ago that the plan had to be much more goal oriented. I don't believe that it is simply a wish list.

I do, in fact, believe that it is a statement of requirements and needs for each of the airports that are covered in the plan. That plan is now under revision. We plan to issue the next edition in September of 1993. I think what you will see in the September 1993 edition is a plan that is much more accurate in terms of a five-year forecast.

We have taken a lot of time to be sure that this is an accurate five-year portrayal of airport development needs. We have shortened the time frame from fifteen years to five years, so you will see a lot more focus in the plan than it has had before, and you will also see the measurable goals that GAO has asked us to include. You will see goals like there will be no increase in delays in the airport system. There will be no deterioration in the condition of airfield pavement. So we have tried to be as goal specific as we possibly could.

We fall short in the work that we have done in our ability to prioritize, so we still lined up with a statement of needs that is goal oriented, but we have not. I think it gets back to the discussion we had this morning on investment criteria. We have not applied those projects to true investment criteria.

AIP INVESTMENT CRITERIA

Mr. CARR. Well, the GAO I think supports some of what you are saying here. It says that you don't even have good data on which to write a plan, and that gets to a discussion we have had before

about doing what we can to encourage you to discuss what FHWA is doing with them. They really are quite advanced in this.

We held a series of occasional briefings over the past several weeks as we have tried to come together to form our own investment criteria, and I was pleasantly surprised. I really had not thought that the Federal Highway Administration was as far along as they are, and I was really impressed. And it seems to me that given the fact that there is a certain overlap between what they are examining on highways and what you would be examining at airports, and I say only an overlap because you would have to take into account parameters that they don't and they probably take into account some parameters that you wouldn't have to. Nonetheless, there is an overlap and they are producing a data base, as I said earlier this morning, that is truly phenomenal. Now they are in a beta test of software that manipulates that data so that with a personal computer with about a gigabit of hard disk space and a fairly fast clock rate processor they can put this entire thing on someone's desk.

So they have the hope that they will be able to put this in the offices of city planners, metropolitan planning organizations, State governments, maybe even this committee room on occasion for demonstrating certain things, and then you interrogate this computer and you say, give me your highway segments by quality, give it to me by performance. You can even do investment analysis. Give me the segments that will give us the greatest rates of return, and you put all kinds of assumptions in there.

I mean, the computer does not substitute its judgment for yours. Ultimately it is human judgment about what factors, what parameters you use, but we find that very, very impressive and see that if adapted to the airport environment, we would begin to have some real tools on what the true airport needs are out there. And so I would like to do all I can to encourage you to talk to the FHWA in a meaningful way to see what it is they do and see if you can't adapt some of their methodology to the whole airport environment.

Mr. DEL BALZO. Mr. Chairman, you made that suggestion when we talked a couple weeks ago. As a result of that conversation, our staff has met with staff from the Federal Highways Administration. We will continue to have discussions with them. We will try to learn from what they are doing, and apply the pieces of what they are doing to the development of our own criteria and our own database.

EVALUATION CRITERIA FOR NEW AIRPORTS

Mr. CARR. Well, that is very encouraging because, you know, at a time when we had enough money and we could engage in distributional investment, that is, handing out little dribs and drabs everywhere, you probably didn't need that kind of an analysis.

On the other hand, with scarce resources and critical needs, we want to be able to measure and target and prioritize our investments as much as possible and get away from these distributional, "dole out the dollars" types of strategies that I think the American taxpayers have been rejecting for a long time.

We just haven't gotten up with their attitudes about things. They have to target their dollars. They don't make all the money that they want to make and they have to target, as we all do, and all taxpayers do. We all in our individual lives, have to take the amount of resources we expect to get this year and say "this year we are going to spend it on fixing up the car and putting a new roof on the house next year," or vice versa based on what we think our needs are, and we have got to do that for them as a government too. And I think having those tools will enable us to do that because right now we are really naked of methodology to get our hands around those problems and try to give the American taxpayer some confidence that we are doing the right thing.

NEW AIRPORT STUDIES

Mr. CARR. The next area of questions that I would like to ask you concerns new airports. We hear about this all the time. I am interested in the process that FAA goes through basically to study the need for a new airport in any particular location. Pick one. I don't care. This is not site specific.

We often hear that new airports are likely to be needed before the turn of the century and we get little pieces of information from some communities who want a new airport or are thinking about a new airport. In the case of Chicago, it got quite advanced. The local community there spent lots of money on trying to figure out how to get a new airport only to see it all collapse.

I might say that my recollection is, a few years ago, the FAA actually came to this committee and requested long-lead funds for F&E at this airport that never materialized. I take some pride in the fact that I said I think you are getting a little ahead of the curve here. We don't even know whether the airport is going to happen. This committee disallowed that request, and as it turned out, the airport it doesn't appear is going to be built.

But educate me on the process. Take any airport, any place, what happens? A new airport, how do you evaluate that?

Mr. TAYLOR. All right. Any airport, any place, and I won't reference the one that I know you are thinking about except generically. We, even with the National Plan of Integrated Airport Systems, develop general forecasts as to airport needs, as you have heard 100 times, I am sure.

Upon observing a need for new facilities on a given airport or a need for a brand new airport at the unnamed site, let's say, we encourage the airport sponsor to engage in planning for a new airport, making appropriate forecasts regarding the use of air space and the use of airport surfaces in that given area.

In the unspoken of place, contractors went to work at the behest of the airport sponsor or to-be sponsor and determined that during the year 2000 there would be an estimated shortfall in terms of passenger capacity in that area of about 15 million passengers. That suggested a need for a new airport facility in that given area.

Those conclusions were tested not only by the FAA, but also by organizations which would not have an airport built in that particular area, largely due to competitive factors and that sort of a thing.

It is then normal that an airport sponsor or proposer comes to the FAA looking for planning money, analysis money, environmental assessment money, site selection monies and things of that particular nature. We examine the prospects and then fund at least initial planning, which is relatively site specific.

With those monies, the airport sponsor normally employs a contractor. The FAA looks over the entire effort, and the airport proposer or sponsor then engages its organization in the site selection process. Then occasionally the affairs of mice and men go awry.

In some areas there are competing interests for the site. In some areas there are competing interests as to whether or not an airport even ought to be added to that particular region. Economic interests come into play, environmental interests come into play, social interests come into play, certainly political interests, if I have not mentioned all of those, that comes into play.

If the airport sponsor is successful in negotiating the paths toward a site selection, that is a given site and it passes all the tests it needs to regarding the forecasts, the aeronautical need, the environmental considerations and so on, then we engage that airport sponsor in an actual airport master planning and airport layout planning grant.

That is the first step in actually getting something physical on the way regarding a brand-new airport establishment. Further monies are offered via the grant process for further development of the process. The bond market goes into place such that the airport can be better financed. And all sorts of financing mechanisms are operative.

Those financing mechanisms, along with the planning mechanisms, if all goes well, would have the effect of the beginning of an airport which might come into fruition seven years beyond the initiation date for the airport project. And that is generally how it goes.

EVALUATION CRITERIA FOR NEW AIRPORTS

Mr. CARR. Just think philosophically.

This is interesting, because I was at a call-in show in East Lansing—WKR is our public station, and once in a while I go over there, and we have people who just call in. I had a fellow call in one day, and he said what we really need to do to pick up the economy in the local area is to build a major SST port at—he was very site specific. It was the corner of Interstate 69 and U.S. 123.

And it caught me by surprise. He had it all figured out that supersonic transports were a thing of the future and that my own local area up there in Michigan could get on the leading edge of the curve by getting an airport at the intersection of Interstate 69 and 123. I figure the fellow owned about five acres out there. And I said, no, I didn't think that was a terribly good idea.

But I am a little surprised that we would hand out money for initial planning, as you indicate. Did we hand out any money to Chicago for Lake Calumet's planning? They spent an enormous amount of money, time and attention, drawings, consultants, surveys, this and that.

Mr. TAYLOR. No, not specifically for Lake Calumet. The city spent about \$10 million on that particular effort, I understand. We contributed a minor amount of money through the State and that policy committee that they had established out there pursuant to the site selection process. But our monies were in the minority.

Just let me make this observation. Some believe that the Federal government is the major contributor to the capitalization of airport development. Quite the contrary is true. I mentioned bonding for airport development and things of that particular nature. It is fact that, on the average, the Federal government, the aviation trust fund, in terms of a new airport, might contribute as little as 30 percent and sometimes less than that to the airport's development.

Regarding anyone coming to us with their hands held out suggesting significant airport advantage in their particular area, we always challenge them regarding the aeronautical need. And if we do not find apparent aeronautical need in a given area after we examine the region in terms of its air space, its capacity, its shortfalls in terms of aviation services capacity, we decline to fund it.

In the past years we have had several representatives from several States and several regions come to the FAA suggesting that they had the magical site for a superport, a wayport or supersonic or hypersonic port or whatever. And each time we have challenged them regarding the true aeronautical need as opposed to the economic development. And where we find the aeronautical need failing we do not fund.

Mr. DEL BALZO. Mr. Chairman, I think I would address a couple points to what Quentin said.

Before we commit to a major Federal investment, we would look for four things. We need to be convinced, first, that in fact there is a serious need in the region. We need to be convinced that there is an acceptable site. We need to be convinced that there is a regional consensus on how to proceed. And we also need to be convinced that the financial resources are available.

I don't know of anyplace in the country today that meets those four criteria.

When we are convinced that there is a need and we believe that there is a way to get to the end where we can identify the other three criteria to our satisfaction, we would fund planning studies a modest amount. We have done that in Chicago. We are convinced there is a need in Chicago. We funded planning studies to sort out whether or not there would be an acceptable site that had regional consensus. That was not a significant investment, I don't believe, on our part.

There are a couple of places throughout the United States now where we are making some modest investments where we believe there is a need: Boston; San Diego; still concerned about Chicago; Phoenix; Minneapolis; and Seattle. We would fund the planning study based on our being satisfied that there is a serious need.

OTAY MESA AIRPORT PLANNING STUDY

Mr. CARR. Well, let's consider for a moment the case of the airport at Otay Mesa, south of San Diego, on the border with Mexico. And the FAA is funding a study, as you point out, for a new air-

port there despite the opposition of the current mayor, the local congressman and apparent disinterest by the Mexican government. Apparently, there is no consensus in the surrounding communities either.

Mr. DEL BALZO. I could change that, and I think it is consistent with what I just described. We believe there is a serious need for additional airport capacity in San Diego. We did not believe that there was an acceptable site. There was certainly no regional consensus.

So we funded some planning effort to see whether or not we could reach agreement on an acceptable site and whether or not there was a regional consensus. We are convinced now that that is not true, and we are no longer funding that activity.

Mr. CARR. What was your total?

Mr. DEL BALZO. I don't recall. Quentin may know.

Mr. CARR. I was told about \$600,000. Is that a fair estimate?

Mr. TAYLOR. That was for \$594,000 for one level of effort. But let me add that we have been looking at that particular area for some time. And we funded San Diego—that is, the San Diego association of governments, for an amount of \$479,000 some time ago and then \$594,000 to the City of San Diego. Same proposition: an airport in southern California, how could it be done, where could it be done.

As Mr. Del Balzo has indicated, certainly there is a need for it. So the total spent to date in that particular area, and this goes back at least ten years, is \$1,073,000.

Mr. CARR. I am told that the consultant for the study was picked not by the FAA but by the City Council. Is that the case?

Mr. TAYLOR. I believe that is the case, but not without FAA cognizance.

Mr. DEL BALZO. Which is also normal. We don't pick consultants.

Mr. CARR. Well, it would seem that the consultant was picked after the City Council had voted for the airport. It is not inconceivable to think that the consultant would not be entirely impartial in the matter. I mean, if the FAA is funding studies, shouldn't you impose conditions of impartiality on consultants?

Mr. DEL BALZO. I would agree with that.

FORECASTING

Mr. CARR. We find that, particularly when it gets to the needs analysis, this is something I think the Committee is going to be looking at in the future.

Whether it is transit and their ridership forecasts or airports and employment forecasts. a lot of these forecasts tend to be, particularly at the initial stages, almost entirely promotional. Then as the nose of the camel gets under the tent and pretty soon the head and the ears and the neck and everything else, then suddenly the forecasts begin to get real. But, by then, you have got a sunk cost, and you have established a momentum, and you have got constituencies, and people have put their careers on the line. It is pretty hard to turn it around.

What can we do to get more reasonable forecasts at the outset? Do you worry about that at all?

Mr. DEL BALZO. We do worry about that. I don't believe that our forecasts are that far off the mark. I was at two forecast conferences that were held this year, and the data that I saw compared actual traffic today to what it was that we forecast five and ten years ago. We came within 1 or 2 percent of where we are today.

I think we are getting better and better at the forecasting that we do, largely due to the work that Dale McDaniel and his people do. I really believe we do a pretty good job of forecasting.

Mr. CARR. I guess my comments weren't so much about your work but the work of the consultants, the so-called consultants, who get hired to get these things kicked off to begin with.

But let me ask you, while you do your own forecasts, do your forecasts include any provision for high speed rail and Maglev?

Mr. DEL BALZO. I will ask Dale to build on that.

Mr. MCDANIEL. In the national forecast, the simple answer is no. It is not a significant factor in the preparation of the national forecast.

When we look at regional area forecasts and how we expect traffic might grow over the region, for example in the Northeast Corridor traffic into New York, we would take account of other transportation possibilities and what developments are taking place.

FORECASTING DATABASE

Mr. CARR. When you do your forecasts, you probably use the database that is created when every tenth ticket is taken, right?

Mr. MCDANIEL. We use that some with the allocation of the forecast. Our forecast really begins with the national economic forecasts, and we move from that to break it down on a regional basis. We use the sample data to some extent in making that determination, yes.

Mr. CARR. I probably ought to say something because otherwise a lot of people won't understand the line of this questioning.

Every tenth airline ticket is essentially sent to the DOT. It is all done electronically from computer reservation systems at the airlines. Given that you are comparing, however, as you say in the Northeast Corridor, wouldn't it be wise to take every tenth ticket from Amtrak as well?

Mr. MCDANIEL. It probably would. And I think at the time that we look at the regional forecasts we would take account of that information. We just don't do that on an annual basis. Annually, we do a forecast of what we expect the nationwide traffic to be and break that down based upon, partially, the regional forecasts in which we do an in-depth look at what might happen in southern California, what might happen in the northeast, Chicago area. Those detailed forecasts we do on a cycle of four to five years.

When we go and look at a region, we look at all available information in the region. So, indirectly, we would take account of that in the national forecast as we break down the national forecast into the region.

Mr. CARR. Right. But how do you get the data? I mean Amtrak does not report every tenth ticket to the DOT the way the airlines do. How would you get the rail data?

Mr. MCDANIEL. Well, we can get ridership data by looking at the summary statistics that Amtrak makes available.

Mr. CARR. That is true, but you don't know the city pairs that are involved.

Mr. McDANIEL. No, that is right. We can tell, basically, the Washington-New York traffic, from that data, I believe.

Mr. CARR. Well, I think the Committee has some interest in asking, particularly as this administration pushes toward high-speed rail—something I might hasten to add I am not an enthusiastic supporter of in most cases. I think the Northeast Corridor is one that is very meritorious, and there might be something out in California, southern California, which comes into play in the San Diego question here a little bit.

There are some places where high-speed rail, I think, can have some dramatic improvement of service and flexibility to people. But, in the main, I think that they are getting the cart before the horse here.

Mr. WOLF. Would the gentleman yield?

Mr. CHAIRMAN. I would be glad to.

DENVER AIRPORT PLANNING STUDY

Mr. WOLF. In the hypothetical you were referring, apparently, to Denver—or maybe not.

Mr. TAYLOR. No, sir.

Mr. WOLF. Maybe not. But did—when you give the planning study money—or let's back up. How much planning study money was given to Denver?

Mr. TAYLOR. Oh, to Denver did you say?

Mr. WOLF. Yes.

Mr. TAYLOR. I don't recall that. I was about to respond to the hypothetical situation here. I can give you that number.

Mr. WOLF. Well, that would be important. I don't want to rehash the Denver Airport over, but I would like to know how much you gave. Or if you have it now or you can just submit it for the record.

Mr. TAYLOR. I would like to do that. My recollection is that it was around five or six million dollars or something along that particular order but stretched out over a rather long period of time.

[The information follows:]

The City and County of Denver has received two grants for planning money for the new Denver Airport. AIP-01 was for \$233,625 federal for planning using the "airport machine" modeling for evaluation of alternate airport layout. AIP-08 was for \$108,000 which is to fund a portion of a light rail feasibility study that has joint sponsors of FAA, FHWA, FTA, and EPA with total federal=\$250,000 and total project=\$500,000.

Denver funded their own numerous planning studies to support configuration and location alternatives; environmental; engineerings; site selection; forecasting; financial; etc. for a total of \$6.5M. These funds were expended in the 1984 through 1989 time frame.

NEW DENVER AIRPORT—PROMOTIONAL FUNDING

Mr. WOLF. I don't know that Denver completely met the four points that you were talking about.

Also, I was wondering, too, how do you—I guess that is how you interpret it. But how do you shield the money or preference the money so the money is not used for hiring public relations people and lawyers who come in and lobby on these issues? Because there were several law firms that were hired for the Denver Airport, to lobby the Congress. I know some of them were prominent firms here in town.

How do you spend that money, fence that money, so that when you are funding it you don't know that the locality is taking it maybe not directly but they counterbalance it in such a way that it goes to a law firm, it goes to a public relation firm to whip up support for the project?

Mr. TAYLOR. Mr. Wolf, normally, we do it in this way. We demand that the airport sponsor, that is, the planning agency, certify to the FAA regarding the scope of work of the consultant or consultants that would do the planning. We also receive from the airport sponsor estimations of costs for doing that particular planning work.

Mr. WOLF. Do you ever ask them, are you going to be hiring law firms or public relation firms to push this project? Does that come in? I mean, if a project takes place because the people really want it or because there is a group out there promoting it, a lot of times you are not really sure. Do you ask those questions?

Mr. TAYLOR. We do.

Mr. WOLF. Do you know how much outside money was spent out in the Denver area to promote the airport?

Mr. TAYLOR. I don't. But I can tell you this: None of it came from the Federal coffers.

Mr. WOLF. No, I am sure of that. But do you think that was a significant amount of money spent by Denver? Did you have any feeling about that?

Mr. TAYLOR. I think over the course of years it was significant.

Mr. WOLF. I felt, too, when you were giving the standards that you used, I think the political one has a big bearing. And I, at times, felt that the FAA wanted the Denver airport, and the Secretary—Secretary Skinner—wanted it as much as the people of Denver. Whether it was for the reason that there hadn't been a major airport built for a while—but I think the political ramifications makes a big impact.

And perhaps there should be some mechanism that you notify the Congress, this committee or the Public Works Committee that—when these planning studies are being made so that we are able to kind of have a flag out there early to know what is going to be taking place. Maybe not this year or next year, but two, three, four years down the pike. Do you ever do that? Do you ever notify—do we get notified as to what planning studies are being funded?

Mr. TAYLOR. Not directly. But as we report on grants which are proffered each year, there is indication within that listing of grants as to major project starts, consultant contracts or planning contracts, planning grants, as we call them.

Mr. WOLF. But you have to look for them.

Mr. TAYLOR. And we can make it easier for you. We can ferret those out should it be your interest.

[The information follows:]

In fiscal year 1991, grants were issued for master plans for new airports at:

- New Koliganek, Alaska
- New Minto, Alaska
- Chicago, Illinois (Continuous)
- Columbus-Oswego, Kansas
- Sharon Springs, Kansas
- Winchester, Kentucky

Plaquemines Parish, Venice, Louisiana
 Howard County, Clarksville, Maryland
 Picayune, Mississippi
 Blair, Nebraska
 Broken Arrow, Oklahoma
 Baytown, Texas
 Stafford, Virginia
 Tappahannock, Virginia

In fiscal year 1992, grants were issued for master plans for new airports at:
 Searcy County, Marshall, Arkansas
 San Diego, California
 Marion, Iowa
 Walton, Kentucky
 Albany County, Albany, New York
 Carlisle, Pennsylvania

Mr. WOLF. I think it would be helpful because I think it would sensitize to Congress what is going to take place two or three years from now. Because I am sure people who were sitting here earlier could have found out about the Denver situation had they looked for it, but they didn't object.

Mr. TAYLOR. Let me, using a few seconds, if I might, Mr. Chairman, add a degree of comfort to you, thinking in terms of Denver.

We in the FAA have been engaged in that Denver project ever since the days when it was imagined that we could expand Stapleton. We were involved in that project when we were thinking in terms of moving on to the Rocky Mountain Arsenal as a way to expand Stapleton. We engaged ourselves in the problems of long-distance taxiing at Stapleton. We kept our eye on the activity forecasts in that particular region.

We kept our eye on the delay actualities as well as prognostications caused by a congested Denver during the inclement weather, when the Denver Stapleton facility was reduced to a one-runway configuration. Yet it was a major node in our national aviation transportation system.

And, yes, we did support the development of a new airport because we believed it not only to be critical to Denver but to be critical to the National Airport System or aviation system.

And I hope that helps in the——

Mr. WOLF. Yes, yes, it does.

Did the idea originate more with the FAA or more with the people in Denver?

Mr. TAYLOR. Actually, it originated more with the people in Denver, along with counsel from the FAA recognizing what great difficulties the Stapleton facility was giving us as a national aviation transportation asset.

Mr. WOLF. Thank you.

Thanks, Mr. Chairman.

SAN DIEGO AIRPORT PLANNING STUDY

Mr. CARR. Turning back just briefly to San Diego. Is any further money planned for that project?

Mr. DEL BALZO. No. The planning study itself will be completed in May of this year. We have finished the airspace studies. The airspace studies themselves raise some serious airspace problems. There is no other money going into that project.

PEOTONE, ILLINOIS PLANNING STUDY

Mr. CARR. Another case might be the study for Peotone, Illinois. I am told that the FAA has funded about \$2 million for this study. Is that the case?

Mr. DEL BALZO. We have not funded \$2 million. We are reviewing whether or not that makes any sense. Chicago remains one of those locations where we believe the need is there. We do not see the acceptable site. We certainly don't see the regional consensus.

The question that we are now asking ourselves is, is it likely that another \$2 million to support a specific analysis at Peotone will result in Peotone being declared an acceptable site with regional consensus? We have serious concerns about that, so we have not approved that \$2 million grant.

ADDITIONAL RUNWAY FOR O'HARE AIRPORT

Mr. CARR. Well, I think that is wise because I don't think that the Peotone site has the requisite support. And I would be very surprised if it could get the support of this Committee, given these austere times. I did, I might say, receive a very well-received briefing by officials from O'Hare about the possibilities at O'Hare.

Mr. DEL BALZO. The possibilities at O'Hare have to do with an additional runway.

Mr. CARR. Or several additional runways, but it appears that O'Hare has not run out of alternatives.

Mr. DEL BALZO. Yes.

Mr. CARR. Are you involved in any work with the City of Chicago on the O'Hare alternatives?

Mr. DEL BALZO. We are working closely with the City of Chicago. We are excited about the possibility of an additional runway at O'Hare.

But I think you also know that O'Hare has its own cap on numbers of operations. What you would get out of an additional runway would be not so much an increase in capacity, you will get a reduction in delays. But, in terms of the number of operations, something else has to happen politically before that would come.

DENVER AIRPORT NOISE PROBLEM AND LOCAL FUNDING

Mr. CARR. Well, hopefully, that can happen. But that raises another good question, which I think is not the whole story at any of these airports, but it is always nice if you are the mayor or the airport authority, if you can figure a way out of your local political problem through Federal funding.

Also wrapped up in the Denver situation was the noise controversy, and expanding Stapleton never really solved that problem. That was perceived in Denver as expanding that problem.

Mr. TAYLOR. Exactly.

Mr. CARR. And so if you are interested in finding a solution to a noise problem it would have been far cheaper if we bought all those people out than built a whole new airport.

But it is clear that a lot of times the local officials will propose some of these new things, motivated out of, one, local economic development that may or may not have anything to do with the Federal economy; two, an ability to create immediate jobs and be a

hero; and, three, potentially solve a local political problem at no expense to yourself. And I think we have got to be aware of that, and we have to enforce discipline.

I mean, there are mayors in this country who have bitten the bullet and taken the tough stance, gotten the support of their city council and done the right thing. Their answer wasn't to build a whole new airport in somebody else's backyard.

I recall going down the street of a community that was affected, where the mayor had taken a tough stance. They had him hung in effigy out in their front yards. It was quite a sight. That fellow is still the mayor today and more popular for it. He took tough measures. Some people in his community that didn't like him, and will never like him, but he solved the problem. He solved it there, and he solved it at that airport. He didn't try to finance his way out of a tough political problem with Federal dollars.

I knew Mr. Wolf would ask a number of questions about Denver, but let me ask a couple myself.

One of the more irritating things that—to this Member—about the Denver situation was that every so often there would be a referendum or a vote through the City Council in Denver where Denver would proclaim that it was never going to put a Denver dime into that airport. It was wonderful if you could build it, and we don't have to pay for it. Has the City of Denver put any money into the Denver airport?

Mr. DEL BALZO. Quentin?

Mr. TAYLOR. Yes, the City has. The magnitude of which hazard a guess, though. If you care, I will research that for you.

Mr. CARR. I would like to, I would like to receive that. Because one of the things this Committee likes to do is help communities that help themselves. And when a community comes here and says, "we are going to do a 50 percent match on a local transit project", we know that community is committed to it. They are sharing the risk. And we have a high degree of confidence that what is being done is the right thing.

But to go through the Denver experience on this committee, having the City Council repeatedly pass resolutions proclaiming that not a dime of Denver money was ever going to go into the Denver airport, that the whole thing was going to be purchased and built on somebody else's dollar, it was particularly irritating.

So if you can tell me that there was some money in there, probably through inadvertence, I would like to know about it.

Mr. TAYLOR. All right, I will take a look. I am fairly sure that there had to be, if for no other reason than the sponsors' necessity to put up matching funds for whatever development dollars we might have put into the facility.

[The information follows:]

In March 1990 Secretary Skinner submitted a report to Congress as requested in House Report 101-315 to address concerns on the New Denver Airport. The report contains information on funding.

The report addressed specifically the source of funding for the New Denver Airport. Specifically the issue of CCD issuance of general obligation bonds was discussed. It was acknowledged that Denver did not have sufficient general obligation bonding available to guarantee the needed funding for the new airport.

Furthermore, all concerned parties were informed that the electorate of Denver approved the New Denver Airport on the specific condition that no general tax revenues would be used.

Seven bond prospectus for selling \$2.7B bonds included the information that funding did not include any obligation on the general public.

The public response to the \$2.7B bond issuances has been outstanding and the most recent (Sept. 1992) bonds sold at a considerably lesser interest rate than the May 1990 issue (approximately 2%). It appears that revenue bonds are an adequate source for funding as investors have fully subscribed to all bond issues.

Denver will close Stapleton International Airport when the New Denver Airport opens. As a part of its commitment to constructing the New Denver Airport, Denver has committed all revenues from the rental/sale of the existing facilities and the 4,700 acres Stapleton airport site to defray the cost of the new airport. This will result in (future) some monies being invested by Denver as all facilities and acreage were not obtained with federal funding.

DELAY IN OPENING NEW DENVER AIRPORT

Mr. CARR. Now, the Denver Airport's opening has been delayed. What is the status of that now?

Mr. DEL BALZO. It has been delayed until December 19th this year, about a two-month delay.

Mr. CARR. How much additional FAA funding remains for this airport, both in AIP and F&E?

Mr. DEL BALZO. As I recall—I don't recall the AIP number, but for the F&E number, correct me, about \$170 million total. It is about \$4 million less than our original estimate.

We made a commitment at the beginning that we would be ready when Denver was ready. In fact, we will be ready when they are ready. We would have been ready by the original date in October. I don't know how much money is yet to be obligated out of the commitments that we have made.

Mr. CARR. Now, is the FAA money conditioned on Stapleton being closed?

Mr. DEL BALZO. That is part of the AIP grant. The AIP grant specifies that Stapleton will be closed. There will be no runways left open.

Mr. CARR. And do you have any stipulations about money returned to the Federal government from any alternative use made by Stapleton?

Mr. DEL BALZO. I don't know the answer to that.

Mr. CARR. The Federal government invested over—maybe you could get me a figure of the amount of money in AIP grants that went to Stapleton over the years. It would appear to me that the Federal taxpayers ought to, as a whole, recover some of their investment there. Because, in point of fact, this airport—the Denver airport is not so much a new airport in the sense of being a new additional airport, it is a new airport in the context of being a replacement for one that is being closed.

Everyone can argue about whether there is a capacity improvement or not. I understand the new Denver airport, will have fewer gates than the airport that is being closed, but all of those things can be discussed later.

But I would like to know what the AIP funding to Stapleton was and what plans there are by the FAA to recover some of that money.

Mr. DEL BALZO. That is a fair point.

Mr. BELGER. Mr. Carr, I will answer your question about F&E funds. There is \$1.2 million in 1994. It looks like the future requirement is about \$2.8 million. That is what is left of the \$170 million that Mr. Del Balzo mentioned.

[The information follows:]

We have invested \$101M at Stapleton International of which \$91M remains under our 20 year grant obligation.

FAA and Denver have agreed that Stapleton International will close at the time that the New Denver Airport opens.

FAA has agreed to transfer all grant obligations outstanding on Stapleton International to the New Denver Airport. As a part of this agreement Denver will obtain fair market value for the existing facilities and the 4,700 acre site and use these funds to defray the cost of the New Denver Airport.

The transfer of grant obligations to the New Denver Airport is in accordance with our normal process when a replacement airport is established. Denver will meet all grant obligations and FAA has assured that the federal investment is protected in accordance with our grant agreements.

The agreement that Denver will receive fair market value for the land and facilities at Stapleton and the investment of these monies into debt retirement or for construction and improvement at the New Denver Airport assures that the federal investment is protected.

DENVER AIRPORT: RELOCATION OF CARGO FACILITIES

Mr. CARR. Okay. Apparently, there has been some controversy over the relocation of cargo facilities at the new Denver Airport to the south side of the airport. Attorneys representing some of the affected local jurisdictions allege that this change will have an adverse safety impact at the airport. Can you tell us about this issue?

Mr. TAYLOR. The concerns raised by some regarding a relocation of the cargo facility from the north side, in essence, to the south side were satisfied by a review of the airport layout plan some time ago by the FAA. We took a look at that revision in the airport layout plan from a safety point of view, an efficiency point of view, an air space use point of view and so on. A finding that the relocation would not be hazardous to the operation of the airport nor would it be inefficient, that is, rendering some of the capacity enhancements null and void.

Mr. CARR. It is my understanding that, in this case, the FAA deferred its normal requirement for an updated aeronautical line of sight study. Is that the case?

Mr. TAYLOR. That is the case.

Mr. CARR. Why was it deferred?

Mr. TAYLOR. Excuse me?

Mr. CARR. Why was it deferred?

Mr. TAYLOR. Deferred, the relocation?

Mr. CARR. No, the study, the shadow study. Did you defer the study?

Mr. TAYLOR. No, I misunderstood you. I was not aware that we deferred the study, no.

Mr. CARR. Well, that is the information that we have, isn't it? Staff tells me that apparently, your regional office deferred this study. Now I hope you call up and find out about that. And for the record—

Mr. TAYLOR. I will confirm that one way or the other for the record, certainly.

Mr. CARR. I mean, it would seem to me that there would be no reason to defer it, would there? That you could think of?

Mr. TAYLOR. None that I can think of, no.

Mr. DEL BALZO. We will check on it.

[The information follows:]

SHADOW STUDY FOR RELOCATION OF THE CARGO AREA TO THE SOUTH SIDE

In January, a proposal was received from the airport sponsor (the City and County of Denver) to relocate the air cargo area from the north to the south side of the airport.

The proposal was reviewed by all operating divisions considering issues from electrical interference to obstacle clearance. Part of that review, included a study to determine if there were areas of non-visibility from the control tower (shadow study).

The shadow study indicated that significant areas of the air cargo ramp area and associated taxilane (part of the ramp area), could not be completely seen from the tower.

Since one would not expect to see aircraft on the ramp on the other side of the hangers and associated buildings, and because this area would not normally be part of the designated movement area within which air traffic control is exercised, there was no objection to the proposal based on that study. No other portions of the airport surface expected to be designated as movement area, i.e. runways or taxiways in phase one construction, are affected.

Mr. CARR. If you had to do the study, would it in any way impact on the opening date of the airport?

Mr. TAYLOR. No, I don't believe so. I was under the impression that the study had been completed and, for that matter, we had approved the airport layout plan as modified.

Mr. CARR. Well, my understanding was that, because they moved the cargo facilities, it required a revision to the study, the line of sight study, the shadow study.

Mr. TAYLOR. We will examine it.

Mr. CARR. And we would like to know why, if they are deferring it, why they are doing that.

And the main access road to the Denver Airport approaches from the south. Will commercial vehicles going to and from the new cargo facilities now located in the south be mixing with the regular airport traffic, if you know, on the access road? What will be the impact, if that is the case? What would be the impact on the capacity or safety problems on that highway?

Mr. TAYLOR. I have heard that there will be a mix. I have also heard that there will not be a negative impact with respect to the safety of the roadway.

Mr. CARR. It was also reported that two former senior officials of the FAA, Administrator Richards and Assistant Administrator for Airports Griggs, were applicants for the position of airport manager at the new Denver Airport during the time the FAA was reviewing the airport's proposed revision to the layout plan. The IG told us that they were looking into this. Have they communicated their concern to you? Have you reached any conclusions? Do you have any information? This would appear to be a bit of a conflict of interest.

Mr. DEL BALZO. Mr. Chairman, we don't have any information back from the Inspector General's office. We are waiting for the information, just as you are.

DENVER AIRPORT: PAYMENT OF CONTRACTORS

Mr. CARR. The trade press indicates that the City of Denver has not paid its contractors building the new airport about \$115 million for work that was done up to 18 months ago. It was also stated in the trade press that the project is suffering under more than 1,000 change orders. Do you have any information as to why Denver may not be paying its bills in this case and why so many change orders have been submitted?

Mr. TAYLOR. Sir, I have no information on that subject.

Mr. CARR. Well, I would like to have not only the information, I would like to have you come up and give me a personal briefing on it. I mean, this thing involves a lot of money. The Federal government's devoted a lot of money to this. We want to know that the exposure of the Federal taxpayer is a fair one. And I would like to know what some of those change orders are about, if that is the case.

[The information follows:]

FAA does not have control over these issues. We received the information from the Denver Program Management Team.

GAO has asked for information from Denver on the late payment issue. Denver provided the following paragraph:

As of December 31, 1992, the City estimates that the maximum value of work completed as a result of all directed and contractor changes for which payment was not yet made, to be no more than \$10 million. The construction staff is working hard to settle changes as quickly as possible. However, the staff is dependent on timely and accurate submittals from contractors. The process could be substantially expedited by subcontractors ensuring submittals are made through the prime to the City without delay. Reasonable settlements will be made as quickly as possible for all directed and contractor changes.

NON-PAYMENT OF \$115M

Denver indicates that the press has inaccurate information. Denver states that as of today there is not nor has there even been \$115M of long-finished work that had not been paid. There is \$75M-\$100M of unsettled changes with contractors. However, much of this work has not been accomplished. Data has not been submitted to Denver by the contractors such that Denver can settle. Some changes are very complex and may include many subcontractors all of which need to provide data for settlement. Not all concerned parties are timely so other parties are held up.

Recently Denver has started sitting down and negotiating with those subcontractors that have large change orders. They have settled directly with subcontractors (prime contractors also present) by using partial change orders to allow interim payments to subcontractors on these large changes.

In fact Denver is not required by contract to make these special efforts; furthermore, these types of efforts are very time consuming for Denver, however, they will continue to make these efforts on this massive project as it is recognized that this is not an ordinary project.

Denver's contracts all allow 45 days from receipt of a pay request until making payment. Denver has been making payment at an average time of 21 days. This indicates that Denver is conscientious about getting payment to contractors. Prime contractors and subcontractors are being requested to do their share in getting adequate data to Denver's to facilitate early payments.

1000 CHANGE ORDERS

Denver estimates there are 950 change orders outstanding down from 1300 change request/change notice/change orders recently. This volume is not unusual for a project of this large size.

There are over 80 contracts for work on this airport project for an aggregate of \$3.1B. It is normal for airfield construction projects to have a few changes based on changed conditions in the field. Building contracts normally have many change orders. In this case major changes have occurred because of new requirements from

Continental; United; and other users, for such items as an automated baggage system which was a late decision; sizes and location of concourses; size of parking garages; etc. These types of major changes effect all contracts that had already been signed.

EXAMPLES OF CHANGE ORDERS

Change orders range from very small to very large. Examples of small:

- Light can spacing change from 10' to 3 meters.
- Electrical circuit changes.
- Grade change on runways.
- Stationing/locations on lighting equipment.
- Duct bank rerouting.

To Medium:

- Changes because of utilities in apron areas.
- Adding of deicing at concourse gates.
- Geo-technical change to subgrade.
- Adding operational surface areas.
- Deleting operational surface areas.

To Large:

- Movement of concourse "A".
- Widening of concourse "B" by 40'.
- Installation of automated baggage system requiring major changes to all buildings.
- Users changes such as Red Carpet Club.
- Tenant wants from concessionaires.

SUMMARY

Denver is aware of the bad press on late payments. In the last few months they are making special efforts to facilitate payments.

From our information a project of this size would not be abnormal to have 7,000 change orders in the life of the project. To day there has been approximately 4,000 and with the project approximately 70% complete, this appears reasonable. To be considered as having an abnormal number of changes you would expect in the magnitude of 8,000 to 10,000 change orders for this massive project.

NOISE COMPATIBILITY PROGRAM

Mr. CARR. Let's turn to the noise compatibility program.

In last year's committee report, we expressed concern over an IG report that showed that at Atlanta's Hartsfield Airport, the airport sponsor had overpaid property owners by about \$49 million and was planning to overpay an additional \$179 million unless the FAA took immediate action to prevent it.

The problem, as the IG saw it, was that the sponsors were not being held responsible for complying with land use control assurances in their grant agreements with FAA. Basically, they were allowing development in the noise impacted areas and then paying for the noise mediation measures rather than controlling the development in the area in the first place.

The FAA did not agree that the sponsors should be held accountable to their grant assurances. Why didn't you agree with the IG?

Mr. TAYLOR. For this reason, thinking in terms of the land use planning and zoning issue, we recognize that the City of Atlanta, which is the proprietor, owner and operator of the airport, did not have zoning jurisdiction in all areas about the airport. Therefore, we felt that we could not enforce a practice or a condition of the grant whereby the City of Atlanta could cause the rezoning of properties outside of the corporate limits of the City of Atlanta itself.

Mr. CARR. Do you think we should allow noise impacted development, only to be bought off later on? What is the answer? We don't give them any money?

Mr. TAYLOR. I think that is an answer, yes.

Mr. CARR. Well, maybe we can help you with that. I think we will take under advisement the idea that Atlanta doesn't get more noise impact money until they figure out a way, somehow or other, to solve this problem—and that may be through the State legislature.

You know, the fact that they are not organized, in a way, to control their own destiny and then keep asking the Federal taxpayers to bail them out isn't the answer.

We have a similar case in a local area here. On March 8, 1993, the Fairfax County Board of Supervisors approved a development plan for land surrounding Dulles Airport. That included the opening up of new land near the airport for residential housing.

As the Washington Post reported, "as most builders remain idle waiting for the real estate market to recover, county leaders have switched development strategies. Instead of reserving the 5,000 acre tract exclusively for new office building, they decided to open it up for housing, shopping centers and other commercial establishments." Then, continuing, "the market is already swamped with empty offices, but there is at least modest demand for more housing".

Isn't this situation similar to Atlanta Hartsfield?

Mr. TAYLOR. In a way, that being that the Metropolitan Washington Airport Authority does not have jurisdictional authority to manage land use that close to Dulles Airport.

LAND USE IN NOISE IMPACTED AREAS

Mr. CARR. This would require legislative authority in the Public Works Committee, but maybe we could help them by appraising them of the implication here. Shouldn't we, as part of a real estate transaction when a person purchases a home in a noise impacted area require that they have disclosure about the noise impact and that, essentially, on the transference of that property they understand they accept that property with the noise impact?

Now I think we know that over the years we will get to stage three and, hopefully, these things will be lessened, but at least at that point you provide a cutoff. At that point, the person accepts whatever decibel limit is being imposed on him at that time and they have to disclose that in a subsequent transfer to somebody else.

Couldn't we attack this problem through real estate law?

Mr. DEL BALZO. Some local governments have, in fact, attempted to do that with various degrees of success. Dale McDaniel has probably thought more about that subject than anyone else in FAA. Dale?

Mr. MCDANIEL. You are putting your finger, Mr. Chairman, on an extremely difficult problem, which was attempted to be addressed partially through the last reauthorization in which you might recall that there was an increase in the noise set-aside from 10 percent to 12.5 percent.

It was the intention of the proposal we put forward at that time that the additional 2.5 percent be reserved for those airports which had succeeded in achieving compatible land use with the jurisdiction surrounding the airport as an additional incentive for airports to move in that direction. That particular proposal was dropped out, and the additional 2.5 percent was simply added.

It remains a problem. It is a very big problem for airport sponsors, particularly in the allocation like the City of Chicago, where there are literally tens, dozens, hundreds of jurisdictions surrounding the airport.

To penalize the responsible parties associated with the surrounding jurisdiction for the failure of some limited communities, that puts an additional burden on the airport and the airport system by not allowing them to deal responsibly with communities which are cooperating with them. It is extremely difficult to find the proper Federal vehicle to address that. State zoning jurisdictions are carefully protected prerogatives of local communities and States.

Just one word about the Dulles Airport situation and Atlanta. It is a factually different situation in Dulles from this standpoint. The rezoning which took place was actually outside the Federal noise impacted contour in the case of Dulles Airport. It was outside the 65 DNL.

One of the reasons that FAA did not publicly say anything is it was outside the Federal impacted area as declared by our regulations. It potentially builds a problem, but it does not build the same Federal obligation as might exist in Atlanta, which was dealing with property inside the Federally impacted area of 65 DNL.

Mr. CARR. Well, thank you for that answer.

Hopefully, though, we could move to some kind of a model of real estate transaction law where people will essentially buy a house after being told. I am sure that the realtor, if they are smart, is not going to show the house on Friday evening when traffic is high.

Mr. McDANIEL. Pick the right wind direction. I think you are right.

Mr. CARR. People deserve disclosure, deserve to know what they are buying so that they are not doing so unfairly. But then, if they want that buy, if they want that property for all the other reasons that people buy homes, and they want to accept that deficit problem knowing that there is an overall Federal program to move airlines to stage three aircraft and that things should be getting better in time, they shouldn't be able to come back and have the FAA soundproof their house after they bought it. I mean, there ought to be a cutoff.

Maybe you folks at FAA could propose a piece of legislation that could be passed to the various State organizations that deal with uniform laws in this regard. And, if that doesn't work, maybe we just say to a State, no airports in your State are going to get any money until you fix this situation. Because it really ends up being a problem at the State capitol, because they are the only one who has jurisdiction over both entities. Maybe we need to get tough with them and just tell them, you can forget about AIP money until you fix this problem.

The gentleman from northern Virginia.

Mr. WOLF. I thank you, Mr. Chairman.

I didn't completely hear the question. I was out meeting with the head of Metro, and somebody said you were talking about Dulles.

Mr. WOLF. I thought that was a mistake. Did the FAA make much of a comment about that? I didn't really hear the FAA.

Mr. McDANIEL. We did not, Congressman Wolf.

Mr. WOLF. I thought you missed an opportunity. I sent a letter out—and we will maybe ask unanimous consent to make it part of the record—kind of warning everyone that——

Mr. CARR [continuing]. Without objection.

Mr. WOLF. What was taking place was really inappropriate. [The information follows:]

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Congress of the United States
House of Representatives
Washington, DC 20515

June 3, 1991

COMMITTEE ON APPROPRIATIONS

SUBCOMMITTEES
TRANSPORTATION

TREASURY—POSTAL SERVICE—GENERAL
GOVERNMENT

SELECT COMMITTEE
ON CHILDREN, YOUTH
AND FAMILIES

SELECT COMMITTEE
ON HUNGER

COMMISSION ON SECURITY AND
COOPERATION IN EUROPE

Mr. James Wilding
General Manager
Metropolitan Washington
Airports Authority
44 Canal Center Plaza
Alexandria, Virginia 22314

Dear Jim:

As someone who has worked hard to help control noise and flyover nuisance at Washington National Airport and who has joined forces with many others to enhance Washington Dulles International Airport as an "economic engine" for this entire region, I am deeply disturbed by activities reported in the media which could pose a threat to those efforts.

One of my first challenges when I was elected to Congress over a decade ago was the emancipation of our two Northern Virginia airports from federal control. The authority, which emerged as the regional controlling entity, has done an outstanding job in both the modernization of National and in enhancing Dulles to give this region the airport capacity it needs to sustain its growth into world markets and to, thereby, become a major source of jobs for Northern Virginians. Under your leadership, Dulles has emerged as a masterpiece of long-range planning and it is a great source of pride to us all.

Washington Dulles represents the ultimate catalyst in economic development for the citizens of Loudoun, Fairfax and surrounding counties. Particularly at a time Dulles is becoming an international aviation "crossroads," to place it in a chokehold of residential housing would amount to killing the goose that lays the golden egg. It would be a tragedy if Dulles were to someday go the way of landlocked airports around the country which find their operations curtailed by noise complaints.

Such a development could not only bring about the loss of jobs for residents of this area, it would also be a serious impediment to the quality of life Loudoun and Fairfax County residents have a right to expect. I don't want to see residents of Northern Virginia bombarded by noise and other environmental pollution from Dulles.

At present, Dulles flights are routed in direct corridors over areas not currently developed residentially. If those close-in areas are also allowed to build up, common sense tells you that airport officials will have no choice but to "scatter" flights over

Mr. James Wilding
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all surrounding areas. And, as in the case of National Airport, there is no river near Dulles to help absorb the sound. To disperse the noise equally over all airport neighbors because of the loss of adequate buffers would amount to an "aluminum sky policy" which would be extremely objectionable to those residents who, when they come home in the evening from the pressures of the day, expect to be able to enjoy their patios and backyards.

To their credit, Loudoun County officials have wisely taken a long-range approach to prevent incompatible land use near Dulles Airport, knowing full well that the future result of not doing so could be restrictions that stymie the travel needs, economic health and quality of life for the community.

I find it most disquieting that a major argument in favor of more housing near the airport involves the advent of quieter stage 3 aircraft mandated by Congress for phase-in by the end of the decade. It is important to remember that while each individual flyover may be somewhat quieter, the aggregate noise, as Dulles expands beyond its current 20 percent capacity, will be greater. There are currently 300 scheduled flights per day at Dulles; ultimately, there will be 1,406 flights daily. And many of these flights involve large, long-range aircraft whose scheduling must allow for crossing many time zones. Given this projected growth in aviation at Dulles, it makes sense not only to respect current noise contours around the airport, but to give them even greater berth.

I would emphasize in this regard that when Congress mandated the retirement of stage 2 aircraft, the intent was to alleviate community noise; the legislation was not intended to encourage landlocking airports which do not today have a serious noise problem.

I realize the enormity of the task facing MWAA in sorting through all the variables to determine how much noise buffer is necessary and defensible, particularly since Dulles is only beginning to flex its muscles as a global aviation nerve center. What impact will the future activity level of the airport have on the citizens? Where do we need to draw the lines so that we adequately protect this facility, which represents the crown jewel in our regional economic development efforts? These are knotty questions. Therefore, on behalf of the citizens and the business community, I urge the authority to take a careful look at the future ramifications of essentially "closing the doughnut" around Dulles Airport.

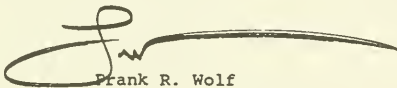
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With the benefit of the lessons learned at Washington National, I know you agree that we must avoid, at Dulles, ever being put in the no-win position of trying to strike a balance between the community and air service. Hindsight should be 20/20 vision, and where there is any doubt, we should encourage delays in construction until we know exactly what the future noise curtain at Dulles will be.

If we allow residential development to encroach on this emerging airport's noise buffer zone, a strong citizens' voice will legitimately be raised that will have to be heard by administrators, politicians and activists. This voice will ultimately and inevitably trigger a reduction well below capacity of flights at Dulles. And this would be a travesty because we can read the handwriting on the wall and avoid it.

I look forward to your response and to your guidance on how I may be of assistance in this important matter.

Sincerely,

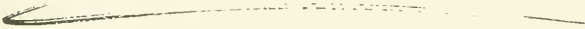
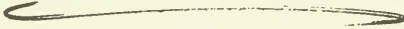


Frank R. Wolf
Member of Congress

FRW:jp

cc: The Honorable Linwood Holton
The Honorable Carrington Williams

Thank You



DULLES AIRPORT NOISE IMPACTED AREA

Mr. WOLF. I had made the analogy of a doughnut around the airport. And I have been a proponent of Dulles. I think it is a very important economic engine in our region.

I fault the Airport Authority for not being more aggressive, and I sent a letter to everyone. I got criticized for sending it out because people thought I was meddling in an area, but I don't get involved in the zoning issues and never have and don't want to. But I urged that the Airport Authority, the Metropolitan Washington Airport Authority, be much more aggressive.

And I think the FAA should have spoken out because we have a wonderful airport that is going to be expanded, creating a lot of jobs. And I remember it was laughed at, called a white elephant back in 1981 and 1982. Now we are up to 12, 13, 14 million passengers and it is so important to the region.

So I think the thrust of what the Chairman was saying I agree with. I think FAA should be more aggressive, and I think the Airport Authority should be more aggressive. And the Airport Authority won't be aggressive unless the FAA is aggressive because, generally, they are people who are trying to bring in business or they are, sometimes, political people who are appointed by governors.

But I think in the future we should look at making the funding contingent upon these things. And when these things come up in the future, I think it is appropriate for the FAA to begin by saying we don't do zoning issues, but we want to let you know that we think this is a mistake for the following reason. And then I think the Airport Authority—you have to get involved and make a decision whether they get involved—will hear it from you and that will give them a little bit of muscle to go in and make those comments.

Because I felt it was a mistake. It is over. There is nothing we can do about it. But I did want the record to show several years ago that I fought very strongly against it. I think, at most, we should have had commercial development and development that noise is really not a problem for. But when someone sits in their house and hears 747s going over their head—

Also, I am concerned, out at Dulles, as you close the doughnut, you force much more traffic down certain corridors. Now, the FAA has the ability, your air traffic controllers, to put some up here, some over here, some over here. You begin to shut that down, and pretty soon you have a couple corridors, and then I think the noise becomes heavier and heavier and heavier.

So I think I agree with what the Chairman said. I think FAA should speak out on those issues because I think that will give the Airport Authority more—a greater inclination to speak out. Why—why didn't you feel an obligation to talk out, say something about Dulles?

Mr. McDANIEL. The Federal standards that we have for airport noise compatibility, the land that was under question for rezoning was outside the Federal noise impact area. It was not—a community with land—they wish to make compatible with the airport, because it is compatible within the Federal standard. So we had nothing from the Federal standpoint to say other than the concern you raise, which we raised unofficially. We had the same concern of

preserving airports effectively. But it goes beyond the Federal standard, and we didn't really have anything to say in this instance officially.

Mr. WOLF. Then maybe the law ought to give you the ability to comment when you see the future of the airport impacted on an advisory basis. Because when you look at the number of jobs that are created by Dulles and the number of base businesses we have been able to attract to this region—many because Dulles is there. As you begin to negatively impact on that airport, you hurt the economic growth of the area. So you may temporarily make a few dollars by building some buildings there, but in the long run you actually hurt it.

Thank you, Mr. Chairman.

CONGESTION PRICING

Mr. CARR. I thank the gentleman for his comments. He certainly has his finger on the pulse of northern Virginia.

Congestion pricing gets talked about a lot these days. I had my own serious reservations about congestion pricing, but earlier this year we did have some economists present testimony to the committee, and a couple of these economists said that they thought congestion pricing would reduce delays.

And, apparently, even the FAA's own report on airport capacity says, "while it is not practical to expect to eliminate peaking entirely, busy airports might reduce delays and improve efficiency by applying congestion pricing".

Could you give us just a few words on what you think, what the FAA thinks, about congestion pricing and why you think that would work?

My concern is that the same thing that is happening with PFCs would happen with congestion pricing. All you are going to do is require the airlines to eat the congested price because that is when people want to go. I mean, they are not doing it because they all want to leave at 10 o'clock or 5 o'clock. They schedule their flights around those times because that is when people want to go. That is when people are trying to travel. That is my problem with congestion pricing.

But in fairness to the other side of the issue, we have had economists here who think that is a big opportunity for us. Apparently, the FAA has said some kind words about congestion pricing. Can you give us your thoughts?

Mr. DEL BALZO. Yes, we have said some kind words, but, on the other hand, we are not sure that peak period pricing would, in fact, be totally effective. And the debate on peak period pricing, I think, centers around whether or not it can be a tool that can provide for more efficient use of scarce airport and airspace facilities during peak periods and provide actually an additional source of funds to further increase system capacity.

I think you know that peak period pricing has been endorsed by the last National Transportation Plan. I think there are enough unknowns associated with peak period pricing—that is a personal opinion. I think the only way to really sort that out is through some limited experimentation. Whether you can introduce peak

period pricing in a way that would be effective and, second, in a way that would not be discriminatory or result in an unnecessary burden on any part of the users, the user industry. I don't think we can answer that question without limited experimentation.

I read the same study. I read the same analyses that you have read and been exposed to. I am not convinced that we will know for real without some experimentation.

Again, Dale McDaniel is much more conversant on that subject.

Mr. McDANIEL. There are peak period pricing arrangements in effect in limited degrees in some locations. New York airports, for example, have a peak period fee, \$5,000, additional during the peak period. The tests, I believe, are: A, is there indeed a peak period in which there is flexibility to move traffic to another period? B, will the fee help to move that traffic to the other period so that indeed the system becomes more efficient as a result of what on the surface seems to have logical potential.

Within the constraint that you addressed earlier, and that is that the fees which are collected remain on the airport, which we believe is the proper constraint. The adjustment of fees—it is not clear exactly how much traffic will move because the airlines have priced their tickets to fit where the demand is, as you correctly observe, trying to respond to when people want to travel. On the other hand, not too many flights have to move out of a peak period to relieve delays in the congestion hour.

So I think what Mr. Del Balzo has said is, probably we don't have enough to know whether or not that is an appropriate approach in those situations in which capacity expansion is not possible. Given our druthers, we would prefer not to see it, and we don't think it should be used as a constraint to avoid appropriate expansion of capacity nor as a reason to unjustly discriminate against airline aircraft using the airport. But it does have potential in those limited situations where there are peak hours, where some change out of those peak hours could improve the performance of the system.

CONGESTION PRICING

Mr. CARR. Well, it just seems to me to be, frankly, a difficult one. There is a debate that I would love to have with some of those who propose it. It seems to be like one of those well-intended proposals offered by somebody with a planning mentality that has absolutely no feeling for the marketplace we know that we have.

The Committee received, incidentally, earlier this year, two excellent briefings by airlines. They were confidential briefings because of proprietary information that may have been conveyed. They briefed us on airline economics and airline pricing and pricing strategies.

And it became clear out of that that an enormous number of people fly to price—typically, the leisure traveler with more discretion on time, the vacation traveler. And then the biggest group, in terms of revenue raising, are the people who fly to schedule—the business traveler, the person that has to be at a certain place at a certain time.

They pointed out the synergy between these two types of travelers. From the airline's economic point of view, you don't want an airplane that is totally filled with business passengers flying to schedule and another entire airplane with tourists traveling to price. It is the synergy. You have got to have groups of those same people on the same airplane. You don't want to separate them. You don't want to push the tourists out of the business plane or the business men and women out of the tourist plane.

It would seem congestion pricing would have a tendency to do that, if it were really to work. The business people would be the ones that would be flying the peak periods. All the tourists would be pushed off into other times. Then the airline economics would begin to fall apart.

So, like I said, I have great reservations about whether this is a viable strategy. But it did come up. The agency has said some nice things about it. And I wanted to know what the true nature of your nice things, having been said, was. So, thank you.

PRIORITY AIRPORTS

Mr. CARR. My final points have to do with the relationship that this Committee has with the FAA in its annual work product.

We have done two things in the past in our Committee reports. We have had a list of priority airports, which I have always looked at with some great amusement because I think it would be easier to list the airports that were not listed as a priority airport. The Committee had absolutely no standards whatsoever for an airport getting on that list. I think you all knew that. I think that the list was designed to have maximum minimal impact on FAA decision making. At least it should have, because I can tell you that not a lot of thought went into putting airports on those lists.

I would like this committee to abandon that process. I don't think it serves any purpose. It might fool some people. It might enable a Member of Congress to put out a press release saying that they had done something for the local community when, in fact, they hadn't.

It might also end up helping the FAA. I am quite sure that somewhere along the line you have had one or two airport managers who have come to you and said, "Look, my name's on this list. You have got to give me my money for this thing I want." I mean, it serves to put you in the middle. I think the FAA has generally known that the list was sort of a silly list.

But, by the same token, I am quite interested that this Committee have some standards and act responsibly. And perhaps I will use the E word, maybe even think of earmarking some funds based on investment analysis that we think merit consideration.

Mr. CARR. In other words, I would like to see if we couldn't develop a relationship between this Committee and the FAA, a good working relationship, so that when you do see an airport in our bill or more preferably in a committee report, that you know that it is there because it met standards that were more than political, that were economic and that relate to some real legitimate concern and that would have the weight of some authority to the agency.

Is that a fair undertaking?

Mr. DEL BALZO. Mr. Chairman, we would welcome that kind of relationship. We would be very happy to work with you and your staff to develop the kind of criteria that we can have some confidence in. It would certainly be better than the way we are doing business today. I agree with it.

Mr. CARR. Do you agree that the current priority list is foolishness that the committee should stop?

Mr. DEL BALZO. We always took that list that you gave us as serious as you did.

Mr. CARR. As we intended? How does he survive so long? Well, as a Member of this committee, I haven't made up my mind, but I am leaning toward recommending that the committee not continue that. I imagine I will have some opposition to that.

There are a number of people who I think ill-advisedly have staked their political careers on something being on that list. I certainly hope not, but, again the people of this country want something done that is better and that is not in the nature of playing games. This Member of Congress doesn't want to play games and so I may be recommending to the committee that we not do that and I wanted something on the record that says that.

Things come to our attention that because they come in a different way than they come to you, might reveal something that might be helpful. We would like to have a relationship where, when we make a decision, that you know it is a serious one and that you know it is done with standards and criteria and hopefully you will be responsive to that.

With that, unless the gentleman from Virginia has some more questions about airports, I would like to turn to operations.

[Mr. Wolf had no additional questions.]

FAA REACTION TO GAO TESTIMONY

Mr. CARR. Let's turn first to the aircraft inspection program that the GAO talked about this morning. Before we get to any general questions, I will give you an open-ended opportunity to respond to anything that the GAO raised in the area of inspections this morning. Do you have a comment about that?

Mr. DEL BALZO. Yes. My reaction to everything we heard from GAO this morning, except for two areas that I think we will get into in the report of the Operations, discussion we will have, I thought were right on the mark. I thought they did a good job. I think they focused in on the right areas. I think they complimented us where we deserved compliments and they raised the right kind of concerns where we have concerns.

I would ask Tony Broderick to respond specifically to his reactions on what he heard GAO have to say about the inspections that Tony is responsible for.

Mr. BRODERICK. I don't disagree with them. I think that the problem that you have to have is to look at this in some kind of a context of the evolution of the program. We are now beginning the third generation of the program and I think headed in the direction that we all agree we ought to be going in.

AIRCRAFT INSPECTION PROGRAM

Mr. CARR. Well, in a 1991 report of the GAO, they noted that you do not have measures of what constitutes good inspection or a good maintenance performance for a particular airline. In response, the Department stated, "It is important to remember that there is no established causal relationship between these performance indicators and the safety of a given airline's operation." If we can't correlate inspection with performance or with safety, it calls into question what the measure of effectiveness of an inspection is.

Could you comment on that, Tony?

Mr. BRODERICK. Well, I think the effectiveness of the inspection isn't really the point. What we want to do is look at the effectiveness of the inspection program in segregating airlines that are compliant from airlines that aren't compliant.

And in response in part to that criticism from GAO, we initiated this Safety Performance Analysis System development that they spoke of with some complimentary words this morning. We have, as we discussed before the subcommittee last year, begun a program that is now prototyped on a few computers. It will be in about two dozen offices within the next month or so. With the aid of over 1,000 of our field inspectors who have participated in singling out measures of good and bad performance, we are developing a system that takes the data from the 400,000 inspections we do every year, all of the inspections done by the military, a whole bunch of financial data that we get from the Form 41 data over in DOT, put it all together and measure the quality of the airline's performance in a number of areas, both comparing their performance to national measures and comparing their performance to more local measures set by the inspectors.

This is a program that is very impressive. It is impressive to us, it is impressive to GAO and the airlines that we have shown it to. It will take quite some time to develop the software, but it is a fairly complex effort when you look at the volume of data we have got. You mentioned a FHWA data base which sounded perhaps similar. We are going to very quickly have a data base that uses the 400,000 annual inspections but then it aggregates them over a period of time. We will have to be comparing airline performance both to other airlines and in a trend sense to see where it is going.

Mr. CARR. Is what you are talking about the criteria that you were going to develop to determine the severity of problems? And if it was, I think you had an initial set of severity criteria that would be developed by December 1992, last December. Are we talking about the same thing?

Mr. BRODERICK. I don't know that we are.

Mr. CARR. That may be a different subject. I don't want to move the subject from where you are.

Mr. BRODERICK. What I am talking about is something where we have, in fact, got initial criteria for the first prototypes on the air operators. We are now moving to a program that will not actually be completed for another three years, the end of 1995 is whether we will complete this activity.

INSPECTOR WORKLOAD

Mr. CARR. It sounds to me like we are talking about the same thing and we have some different dates in here. I would like to have you, for the record, figure out the answer to that question, because we think what you are doing is very important. We want to help you and learn about your progress.

One of the things that came out of the GAO report was that FAA inspectors spend only about 25 percent of their time actually performing inspections. That is the kind of thing that I think would have a taxpayer wondering, why am I paying these people? Can you give us an answer?

[The information follows:]

Yes. The initial set of severity criteria mentioned in our response is the same that is being developed with SPAS. SPAS design includes criteria which established the severity of events to be used by inspectors. Based on the frequency of these events, these areas can be flagged for increased inspection activity. This criteria was developed in fiscal year 1992 and is continuing in the implementation process with SPAS.

Mr. BRODERICK. If that were true, that would be something to wonder about, but they use the word and we try to be pretty precise in our language, surveillance inspections. That is an inspection that is, if you will, a spot inspection, something that is either required because the airline or the repair station exists, or something that they plan because of the kind of work that they see being done.

But, for example, that doesn't count any of the certifications that are done, any of the kind of work that is done for every air taxi every year in recertifying pilots, in looking at certification of maintenance stations, that kind of thing. That 35 percent was a number that was selected based on experience to devote only to surveillance and oversight. It has nothing to do with all the other work that is done by the FAA inspectors.

Mr. CARR. We had a little discussion this morning about the amount of administrative overhead that an inspector has to undertake. Are you working on a program to try to reduce that? This is fictional, I don't have any data for this, but perhaps they spend out of every hour, maybe half of the time is spent on the inspection and half of the time is spent writing a report on the inspection.

Is there any way to make sure that inspectors are focusing most of their attention on inspections and getting the job done, while spending the least amount of time on data entry and data processing and other things?

Mr. BRODERICK. I am delighted you asked. We are doing exactly what you hypothesized might be done this morning. We have been using the kind of image of the clipboard, we call it a pen-based computer system, as our development goal. As the data entry part of this overall system, a separate issue is to develop two things.

Number one, the clipboard, a personal pen-based computer system in which you actually enter the forms of the type that we used to reengineer to make more sense so that an inspector can go out and, say, plan the work in the morning, use the mainframe computer access through his desktop computer to up load information onto the notebook computer, take the notebook out and actual-

ly just punch in 727 and the computer will know that that inspector is inspecting American Airlines 727s.

It will list all the tail numbers and it will list the kind of inspections that are being done and put checkmarks or check forms there to coach on the job aid so that you will have an exact record of what was done, exactly what was found, and it automatically, whether they return, can be uploaded into the computer with the results at night.

Right now we are using, literally, paper forms in which we record data and then they have to go back and either hand it to a data entry clerk or secretary or do it themselves, type it in. It is not very efficient.

In addition to the kind of data entry overhead that we will save, we will also save the paper that goes along with the regulations, the air worthiness directives, the inspector handbook and all of that, because all of that information will be just right in the memory system in that computer. We are prototyping this system and look to have something on the order of half a dozen or a dozen prototypes developed by the end of this year for people to use and, again, develop into a system that in a few years we hope to have widespread use throughout the inspector ranks.

SAFETY PERFORMANCE ANALYSIS SYSTEM (SPAS)

Mr. CARR. I understand as well that a number of private vendors are putting the documentation for say a 757 aircraft on CD-ROMS. Are you interfacing with that to make sure they are doing it right? That documentation has to be approved by you ultimately.

Mr. BRODERICK. Some of it does and, yes, we are. We are very familiar with it and we are going to justify that documentation and use it in our systems. There is no reason for us to duplicate it. They are working cooperatively with us and it is a very effective partnership in which they are doing quite a bit of software development that we will just be able to purchase.

Mr. CARR. So presumably though, you take that manual, which is in itself a bit of a checklist, and expand on that from the standpoint of maintenance and other things and you can do the same things, right?

Mr. BRODERICK. Exactly.

Mr. CARR. How much money are you spending on this activity?

Mr. BRODERICK. The SPAS program is about a—as GAO indicated and we testified last year—about a \$9.5, \$9.6 million program. That is the software development that will be completed in 1995, 1996. I think we have got something a little over \$1 million this year in R&D funds on the—what I call the pen-based computer technology, which is only the beginning of that effort. That will be—

Mr. CARR. That is in your request?

Mr. BRODERICK. That is in 1993. We are going to have to look at what we can do in 1994. I am not sure what is in the 1994 budget. Actually, it is part of the overall human factors and aging aircraft area where we have been doing this work.

We learned first in the aging aircraft and corrosion work that this was where we needed that technology most. You have something like 50 aging aircraft ADs per aircraft model and keeping

track of what you were doing as an inspector out in the field was very difficult with paper.

So we started from the human factors side coming in that way on that program.

Mr. CARR. Is it still on the R&D side?

Mr. BRODERICK. Yes, the pen-based computer is.

Mr. CARR. So there will be questions about that tomorrow in our R&D. We don't want to get too delayed here. We are quickly running out of time as it is. The GAO also said that even though you require an annual operations and maintenance and avionics inspection of each airline, about 30 percent of the airlines did not receive such an inspection in fiscal year 1990.

Can you tell us why you are not able to meet——

Mr. BRODERICK. That was why, in fact, we used very precise language. It is really not true that they weren't inspected. They didn't get surveillance inspections but they did, in fact, every one of them get a certification inspection or surveillance inspection.

One of the problems that we have run into with the GAO and one of the things that we will solve with this kind of computer system is the detail in the documentation. If we have access to 172 mom and pop operations, we obviously don't need an avionics inspection, but the simple computer programs, we used to program in one of each, operations, maintenance and avionics.

ALLOCATION OF INSPECTION RESOURCES

Mr. CARR. One of GAO's findings that I thought was particularly interesting, and I wonder if you would have a comment, is that you seem to allocate your inspection resources based on the airlines' fleet size with little or no relationship to the risk that the individual airline may impose to the flying public.

For example, I would think that a fleet average age or the experience of the airline management or maintenance personnel would be equally important indicators of how you allocate your inspection resources rather than just the number of airplanes they have.

Mr. BRODERICK. You are right. To the first order of course, the fleet size is a big indicator of exposure to risk, but without a system like SPAS, it is difficult to do it automatically, that is, to compute risks. We have, in fact, however, begun to do what amounts to almost a manual job and we are now, in fact, adjusting our inspections based on the relative findings of previous inspections.

If we don't find problems at a particular airline—even, for example, operations, we will drop the number of operations inspections by 10 percent. Or if we see financial concerns at another airline, we will increase those inspections. And we have begun doing that this year.

AGING AIRCRAFT REQUIREMENTS

Mr. CARR. In 1991 the FAA testified before the Public Works Committee that the agency would do all in its power to monitor compliance with the aging aircraft requirements. In testimony this last August before that committee, the GAO indicated that the

FAA inspectors were placing little emphasis on verifying compliance with aging aircraft requirements.

Can you advise us of any improvements in that situation?

Mr. BRODERICK. Well, in fact we completed a full fleet-wide sample after the 1991 testimony and are completing another one this year. We agreed with a number of improvements that GAO suggested in the way we schedule and monitor the airworthiness directive compliance.

Fundamentally what they wanted us to do was, before we did in-depth maintenance inspections for airlines that had aging aircraft at all, we make sure an aging aircraft is available for a nose to tail inspection. We are now doing that.

Mr. CARR. Give me an overall update on the aging aircraft issue. Where do you think we are?

Mr. BRODERICK. I think we are in good shape in the United States. Part of our concern lies with, as the Congress has indicated, educating people overseas about airplanes that we are indeed exporting. There has been a tremendous change, as you know, in the economics of the airline industry and the fleets that people are going to keep and that is causing a bit of, shall we say, confusion in which airplanes are going to get airworthiness directive compliance and which are just going to be allowed to run out and put aside.

But our inspectors that have looked at compliance tell us that they don't see any real problems and I don't see any real problems in talking with the executives. Everybody understands that this is not something we are going to allow to slide.

Mr. CARR. So the traveling public is relatively safe if you are flying a U.S. airline?

Mr. BRODERICK. That is correct, and we intend to make sure that everybody overseas understands the problems through our overseas program and outreach programs and our work with ICAO.

Mr. CARR. I think it is important also that the public know that you have no way of making sure that some Third World or developing country that has a state-owned airline with an aging aircraft that they bought from a U.S. carrier is actually maintaining an inspection schedule or—

Mr. BRODERICK. That is correct. We can't do the job of that government for them.

FUNDING FOR INSPECTOR TRAVEL

Mr. CARR. GAO also indicated that there were resource limitations on your inspectors, particularly in the area of travel funding. Has there been any improvement in that situation?

Mr. BRODERICK. There was in the early part of the 1990's. Frankly, money is very tight. That is one of the few areas where we have some discretion and travel is very, very tight this year. It is going to stay tight next year. We are cutting the administrative travel—what we call administrative travel areas and preserving as much as we can the job required travel for inspectors.

FALSIFIED MAINTENANCE RECORDS

Mr. CARR. Can you give us a word or two about the investigation you are conducting into the allegations of some U.S. Air maintenance employees that falsified records, et cetera?

Mr. BRODERICK. We have completed that investigation. We found that it was an isolated situation limited to a couple of particular inspections done at the Indianapolis facility having to do with nothing that was critical to air worthiness of the aircraft.

Oddly enough, it dealt with some checks on the portable water supply and related areas. U.S. Air has dealt with the people, and we will deal with the people in terms of enforcement action. We are quite confident that the activities that were improper were limited to the Indianapolis facility.

We have turned over also the results of our investigation to the IG for their further work and use as they deem appropriate.

AIR TRAFFIC CONTROLLER STAFFING STANDARDS

Mr. CARR. Thank you, Mr. Broderick. I think we are going to turn now, Mr. Del Balzo, to air traffic controller staffing standards. The Committee's report last year for fiscal year 1992 contained the following direction, "The Committee continues to be frustrated by the procedures used by the FAA in developing the agency's controller staffing requirements. On the one hand, there are continuing reports of controller staffing shortages at some ATC and Level 3 towers. On the other hand, the IG recently reported that many of the Level 1 and Level 2 towers are being overstaffed. To help resolve this problem, the Committee believes the FAA needs to determine its present and future controller requirements based on a facility-by-facility basis. The Committee expects the FAA to address these concerns and report by December 31st, 1991." Over a year ago and this report still has not been received today.

What is the problem?

Mr. DEL BALZO. Let me give you a philosophical answer first regarding controller staffing. By the numbers, we believe that we are staffed just about right. I agree with GAO that there is an imbalance in the work force. You will find some facilities that are, "overstaffed" and you will find other facilities that we would prefer to have some additional controllers.

You will see an imbalance between the number of controllers that we have on board, which GAO talked about this morning, and the staffing standards that we publish. You will find that not just in air traffic, you will find it in Tony Broderick's area in Flight Standards. You will certainly find it in the Airways Facilities System Maintenance program as well. It is probably more severe there.

What we have been doing for a number of years in staffing standards is tinkering around the edges. What we really need to do is take a very comprehensive look at how staffing standards are developed in all of our disciplines. We are in the process now of validating one more time the air traffic staffing standards and we will have something for this Committee within about 30 to 60 days, but that will not address the issue.

I mean, the real issue is, we need to have a better way of developing staffing standards in all of our disciplines. If we could just focus for a minute on what it is that we intend to do and we are in the process of now getting started, and how we plan to come to grips with staffing standards, I think it is worth just a couple of minutes.

Dale McDaniel has taken the initiative to lead the effort for us in developing a set of much more comprehensive staffing standards.

Mr. McDANIEL. The standards that we now have, Mr. Carr, are really job task analysis standards, which are derived by looking at the individual tasks that are performed by technical employees in the organization. In the case of an Air Traffic controller, observing many times because air traffic controllers do their work on a frequent basis and you can sample to some degree the activities, observed behavior of controllers to see in fact what they are doing.

Taking those samples, building them into facility computations to determine if this is what an individual does, what would many individuals working together do in order to handle the work load of that facility, and finally in aggregating that to a national basis to determine what staffing is required.

Similar procedures are used for technicians and similar procedures are used for Flight Standards inspectors, except in those cases the jobs are a bigger job so the estimate of how much time it takes to do a particular task is, again, aggregating. But in each case we have worked very hard to build from the bottom up to the national standard.

What we are going to do is look not only from the bottom up, but from the top down to see, in relationship to system performance, what it is that the details are telling us. So that at each step in the process, as we go from the individual task to the national standard, there are a series of decision points which one reaches, asking how do I put these factors together, and the answer to that question at each of those points makes a big difference in determining the numbers of staff that were said to be required.

So we are in the process, A, of validating individual work load measures in the same way that we have done those historically at the same time that we are initiating a more comprehensive look across the board to ask ourself the question, why is it that we have such wide variations in the major staffing occupations that we have and what does that mean in terms of ability to do the job and system performance.

And we expect for those two to meet in some rational way that we can make an adjustment across the board with regard to staffing standards so that we don't staff in one case at 100 percent, early staffing level, in another case at 70 percent. That is not really an accessible way to look at the principal occupation.

We need to have a common approach, a look across the board, which we will initiate before the end of this fiscal year and expect by the end of fiscal 1994 to have a pretty good grip on how those pieces should fit together.

Mr. DEL BALZO. Mr. Chairman, I think I would add just one point, specifically on Air Traffic. I heard GAO this morning. They said that there was a difference of 800 in the terminal work force.

That 800 is about—it is less than 10 percent, a 10 percent difference between the staffing standard and on board.

The difference in the en route area GAO said was 100, and that is equivalent to about 2 to 3 percent between staffing standards and on board. I don't believe that we can ever come much closer than that.

FULL PERFORMANCE LEVEL (FPL) CONTROLLER DESIGNATION

Mr. CARR. In the area of staffing standards, I have a question that I have asked this Committee ever since I sat down at the end of the dais. We never seem to break new ground, and I will just keep asking it, I guess. We have this term, full performance level controller that I think is a real misnomer, a disservice. You have all heard my sermon on this issue.

Is there any hope that in my time in the Congress I will see the FAA change that terminology?

Mr. DEL BALZO. There is if we can reach an agreement today. We would like to change that terminology too.

Mr. CARR. It gets used against us by others on other Committees, by Members of Congress.

Mr. DEL BALZO. No question.

Mr. CARR. Mr. Pollard.

Mr. POLLARD. I think the good news is that the GAO did not use that term one time this morning. I think we have made giant educational strides there. We looked at redefining that and quite honestly in working with the people that we work with, working with our work force, the union that represents our work force, and working with others within the FAA, I think we concluded that there is a general understanding that full performance level controller is not the only measure of productivity in the controller work force.

We have had acceptance of the operational controller work force. If we changed the definition drastically without getting a lot of people involved, it is just going to create, I think, the confusion that we had before. It has been a nemesis in our side, just as Mr. Del Balzo said, as have the staffing standards as we chase those numbers.

One of the reasons I think it is of less importance or significance now is because the work force has grown. With the limited input we have had over the past year or so, the number of full performance level controllers has increased by over 1,000. We are up over 12,000 for the first time since the strike.

So it is not an emotional issue any longer, I think, with a lot of people that criticized us in the past.

Mr. CARR. But it still is a public relations nightmare and I want you to tell me what a full performance level controller is? I know what the answer is but there are people who are watching this hearing today who might not know.

Mr. POLLARD. A full performance level controller, if I am a controller in a facility and I have a certain area of responsibility, then to be a full performance level controller, I am capable of working all those positions, four, six, eight, however many positions should

be in my area of responsibility. I am also at the highest grade pay wise, GS wise for that facility.

If I am working in the Chicago Center in an area of specialization, I can work all positions within that area of specialization and I am a GS-14 controller. If I am one or the other, then I am not a full performance level controller. If I am checked out there and a full performance level controller and for some reason I bid on another facility and I go to Cleveland, immediately I lose that status because I am in the training process again in Cleveland.

Mr. CARR. And to some extent, these positions, as you call them, are geographic positions.

Mr. POLLARD. In an en route facility, most of them are divided geographically, yes, sir.

TERMINOLOGY FOR CONTROLLER COMPETENCY

Mr. CARR. But it leaves the impression. Others, particularly some of my friends in Congress who should know better, use that terminology to imply that someone who is not a full performance level controller is somehow or other less than competent, but they can be an expert in the position, the geographic area that they are responsible to manage, right?

They would have to be, otherwise they are not certified.

Mr. POLLARD. Right. Using the same example I used in Chicago with eight positions, if I am qualified to work seven of those, I can't work the eighth one, I am not a full performance level controller. I may be just as competent, just as proficient as the full performance level controllers working in that area.

Mr. CARR. I think it would be better, because so few people know what controllers do, other than that they control airplanes. They don't know the details, it might be a better analogy to go to pilots. To fly a 747, you have to be type rated in a 747, right? Now, there might be a pilot who is type rated in a 727 and a DC-9 and a DC-11 and a 747 and if you were to carry the analogy of titles, that would be a full performance level pilot. He would be able to fly many different types of airplanes and be certificated in all of them and checked out in performing all of them.

That doesn't mean that the pilot who is only type rated on one airplane isn't qualified to fly it. It really has more to do with management flexibility, does it not, than any safety consideration?

Mr. POLLARD. Yes, sir. I would say there is absolutely no safety consideration. This is a battle that we fought within the FAA several years ago.

It gives the supervisor of the area more flexibility as far as assignments. In some cases, it indicates status because it is a person that can work all positions, but it has nothing to do with safety.

Mr. CARR. Well, I thank you for bearing with me on one of my little missions in life and that is to get the FAA to change the terminology from full performance level controllers. I think it is just very, very bad for public relations.

It leads to public misunderstanding about the quality of air traffic control that is in place every day and it gets diverted into a management issue that is also very important.

I mean, you need people in your facilities that you can put in any position and cover the bases in terms of the flexibility of your staffing. Somebody, if somebody doesn't show up that day.

But to have that term blown way out of proportion, the way it gets blown out of proportion in the media, is just very unfair to the FAA and all the good controllers out there.

Mr. POLLARD. As you know, sir, we have discussed this before. And I think one of the concerns that we have as we undertake this effort, is that obviously we have the support of this subcommittee and others. Because if we start to make the change, our integrity has been questioned in the past as to why are we changing the definition. It is something that we have had to deal with, someone thinking that we were changing to present a better picture from the numbers standpoint.

Mr. CARR. With all due respect to those who worry about the status of change and changing of status and titles, and things like that, we really ought to be concerned about what the taxpayers think.

Mr. POLLARD. Right.

REHIRING FORMER PATCO CONTROLLERS

Mr. CARR. And when they are satisfied, then we can be worried about what individual people in the controller fraternity think about what is an appropriate title. It would seem to me that we ought to be doing something that makes sense to the taxpayers.

In that regard, let's talk just ever so briefly, we touched on it earlier this morning, but I would like to get it on the record. What is the FAA's position regarding the possible rehire of former PATCO controllers?

Mr. DEL BALZO. We spent the last couple of months getting ready for the possibility. I think the philosophical, and emotional issues are behind us.

If the President decides to lift the ban on the hiring of fired controllers, we are prepared to do it. We have a concern. Our concern is one of unreasonable expectations on the part of those people that had been fired and would expect to be immediately rehired.

You heard GAO this morning say that over the next couple of years, we don't have a need for more than 200 to 300 air traffic controllers per year. That this may be a total of 900, 1994, 1995 and 1996, and we are concerned that there will be unreasonable expectations on the part of 5,000, 6,000 people as to what that would mean, lifting the ban and allowing them to reapply for a government position.

We know how we would take them back. We know how we would integrate them into the work force. We know how we would train them. We don't think it would be a problem absorbing them, but it would be very difficult for us to absorb more than 100 to 200 of them each year. I think that is our main concern.

Mr. CARR. Since the PATCO strike, the FAA has changed fairly dramatically its doctrine with regard to screening and training. And, of course, the controller environment has changed fairly significantly over the long period since the PATCO strikers were ter-

minated. Anyone who reapplies would have to be recertified; is that not correct?

Mr. DEL BALZO. Yes, sir.

Mr. CARR. And have to go through training; right?

Mr. DEL BALZO. Yes, sir.

Mr. CARR. Would they have to go through the screen that is now used?

Mr. DEL BALZO. No, they would not go through the screen. Bill Pollard has developed the details on how we would bring them back, the grade we would bring them back to and how we would go about getting them certified on up to journeyman level.

I will ask Bill to fill in some details.

Mr. POLLARD. Generally, Mr. Chairman, we feel like we have a proposal that we are still enhancing and tweaking a little bit that we would utilize, if and when we bring them back. We would bring those employees back to facilities where the agency has a need. We have been working closely with OPM and with the Department of Transportation on how this would be done if and when the ban is lifted.

We visualize, just as you indicated, that these people probably would need to go initially to some centralized location, perhaps Oklahoma City, anywhere from 30 to 45 days. If for nothing else, for a reorientation to the FAA, to understand what has changed within the FAA; our concerns about diversity, and our concerns about employee involvement programs that we have implemented with the controllers. Those types of things.

The culture is entirely different. From there they would go to their assigned facility where they would go through a certification and a check-out process just as if they were a new employee. Now, depending on where they go and with the knowledge that they would bring back, they may not necessarily take as long as a new employee to check out, but for each position that they would work, they would have to be certified.

CONTRACT TOWER PROGRAM

Mr. CARR. Thank you. Let's talk about the contract tower program that we touched on earlier. The program was instituted after the strike of 1981. Basically, in this program the FAA enters into contracts with local and State jurisdictions for the operation of low-activity Level I towers.

In a 1991 report, the IG noted that the FAA had not contracted out any full-time FAA staff for the towers since the program was begun and recommended that the FAA expand the contracting out program. In response, the FAA said that the agency will take a more aggressive approach to expanding the contract tower program and estimated that over a 10-year period, the FAA plans to contract out 7 to 10 additional Level I VFR towers each year.

How many Level I VFR towers have been converted from being FAA staffed to being operated under FAA contract, and how many of these have been added to the program since January 1991 and their audit report that year?

Mr. DEL BALZO. GAO, again, on that subject was absolutely right. There are two issues.

There are the number of contract towers that we are now operating. The number is 27. We plan this year to bring in six more into the program by the end of fiscal year 1994.

Of the existing 27, I would point out that six do not meet criteria and of the six additional that we would bring into the program by the end of fiscal year 1994, those six don't meet criteria either. So there will be a total of 33 contract towers that we are operating through the end of fiscal year 1994. So leave those aside. Those are all new installations.

We have 96 Level I towers that we would prefer to contract out. The reason that we have not contracted out any to date is a simple one, we just don't have enough funding to do that.

There are two kinds of funding that would be required: One is the funding to actually contract out the operation. And secondly is the funding that would be required to move about the 900 people that GAO talked about this morning to other locations in the system.

So to contract out those 96 towers, involving 900 people, you are probably talking on the order of \$40 million. That money is not in the budget.

Mr. CARR. Now, you say you assume six in your fiscal year 1994 budget request.

Mr. DEL BALZO. Those are not Level I towers. Those are new installations, congressionally placed names. We are in the process of doing that. We have 96 Level I towers that are staffed with FAA people today. Our proposal would be to contract out all 96 towers. We have not contracted out any to date for a simple reason. It is one of funding.

It comes out of the operations appropriation and funding is required to do two different things: One, to actually contract out the operation of the tower. And then secondly, to provide funding to move any of the 900 people that would desire to move to other locations. Most of those people are fairly young in their career. They would be looking forward to a career move.

To contract out all 96 towers, Bill Pollard will tell you we are talking about probably \$40 million.

Mr. CARR. Well, this is part of the problem we talked about earlier this morning. As I understand it, the six towers that are in the process of contracting out do not meet criteria for even having a tower to begin with.

Mr. DEL BALZO. Yes, sir.

CONTRACT TOWER PROGRAM

Mr. CARR. Hopefully, that will never happen to you again. I mean, if I had been Chairman when that started, we wouldn't be doing that, but now we are in the process of trying to get a successful conclusion for the taxpayers on the basis of decisions that were made before we got here. And it would seem to me that we ought to be able to apply some fairly stiff criteria and at least help you in the future to make sure that doesn't happen again.

Is it conceivable that we could do contracting out in a way that wouldn't cost us very much money at all? That is, if a community felt that it was so much in their local interest to have something

that was so far below any standards or criteria from the FAA, that if they paid the entire bill for it, you would spend what funds were necessary to make sure that there was training and certification?

I mean, that wouldn't cost very much money; would it? If the community really felt that a control tower at their airport was the flagship of their pride and prestige and they wanted to pay for it, let them.

Mr. DEL BALZO. Of the 96 Level I towers that we are now operating, 47 don't qualify for continued operation.

Mr. CARR. Could we have a list of those 47?

Mr. DEL BALZO. Yes, sir.

[The information follows]:

As of September 1992 The following FAA level I towers did not meet the criteria for continued operation:

King Salmon, AK
 Lake Hood, AK
 Columbia, MO
 Dubuque, IA
 Grande Isle, NE
 Hutchinson, KS
 Joplin, MO
 St. Joseph, MO
 Charlottesville, VA
 Capital City, PA
 Wheeling Co., WV
 Morgantown, WV
 Alton, IL
 Cleveland-Burke, OH
 Bloomington, IN
 Battle Creek-Kellogg, MI
 Janesville, WI
 Jackson, MI
 Mansfield, OH
 Muncie, IN
 Lebanon, NH
 Walla Walla, WA
 Lewiston, ID
 Olympia, WA
 Pocatello, ID
 Felts Field, WA
 Salem, OR
 Portland/Troutdale, OR
 Twin Falls, ID
 Florence City, SC
 Greenville Int., MS
 Greenville Downtown, SC
 Hawkins Field, MS
 Lewis B. Wilson, GA
 Tuscaloosa, AL
 Jefferson City, TX
 Brownsville, TX
 Shreveport-Downtown, LA
 Esler Regional, LA
 Drake Field, AR
 Lake Charles, LA
 Stinson, TX
 Texarkana, TX
 Chico, CA
 Hawthorne, CA
 Pago Pago, AQ

Mr. DEL BALZO. I think the question you were asking is if we made plans to terminate, would, in fact, a community pick it up on their own. I don't have a feel for that. Bill?

Mr. POLLARD. I may. There are a few communities that operate their own towers. Towns like Jefferson City, Missouri, where it is operated by the city and by the State without Federal funds. One of those we are contracting out this year has been operated by a city, however. We were asked through the appropriations to take that tower over as a contract tower.

Mr. CARR. Which one was that?

Mr. POLLARD. Gary. Gary, Indiana. We have the 27 contract towers that Joe mentioned. Eighteen of those have been named by someone other than FAA. Ten of them are at locations where we never had towers.

The reason we like to contract tower programs and the reason GAO likes it is because once you get through the transition, the \$40 million approximately, then it does save anywhere from \$12 to \$15 million a year. We feel like you can operate a contract tower at about \$150,000 a year less than it costs us to operate it as a FAA facility.

So if you do 96 of them, which is our inventory, you are in the neighborhood of \$15 million a year. So it is a rather quick payback. The problem is, we don't have the flexibility for what I would call the "seed money" to start the process.

Ultimately, what it would do is also reduce our controller work force liability. The demand wouldn't be there because we would have contracted out 900 positions at these Level I's, so the controller work force number that we ask for each year would diminish, all things considered, if they stayed equal.

Mr. CARR. I just want to tell you that I would have no problem making a recommendation to the committee that we pursue our options on contract towers as vigorously as possible. It is clear that the taxpayer wants us to make savings and doesn't want foolishness. And while it might make us unpopular in a certain community who want to spend the Federal dollars this way, I think that we will want to work with you and see that we make those savings and those cuts, even if it is going to be painful to some communities. And I don't have a list in front of me.

There might be one or two in my district, but I will be glad to tell the folks back home that we just can't afford anymore and there might be some exceptions. There might be someplace where there is truly an unusual situation. And I think we would have to leave it to those communities, if they don't meet the criteria for a tower today, we shouldn't be talking about contracting out, we should be talking about decommissioning. That is what we should be talking about.

If a local community thinks that it is important that they have a tower, in spite of the fact they don't meet the threshold of criteria for a tower, then maybe we could work with them for a year or two until they get their own substitute financing in place. But let's get rid of these things.

Mr. POLLARD. Decommissioning saves not only air traffic salaries but some FAA support, and also the cost of the physical plant. So it is by far the most cost effective.

NON-FEDERAL AIR TRAFFIC CONTROL TOWERS

Mr. CARR. Do you have a program though where if you decommissioned it from the FAA, that if the local community wanted to pick it up as an activity, that you would certify their practices and procedures so they would meet FAA standards, and it would be totally off your tab?

Mr. POLLARD. Yes, sir, we do that with the non-Feds, those operated by cities or States in some cases. We do that now with a contract tower. We even had in the past a program where we would actually transfer some equipment to the community or the proponent that wanted to operate the facility.

Mr. CARR. How many non-Fed towers do you have?

Mr. POLLARD. I don't know because they are really not in our inventory. There are a number of them in the system that exist now, where they are operated by a city.

Mr. CARR. Could you try to get a list for those for us.

Mr. POLLARD. Sure.

[The information follows:]

As of September 1992, the following non-federal control towers were operational:

Galena, AK
 Beech Factory, KS
 Johnson County Industrial, KS
 Jefferson City MEML, MO
 Manhattan Municipal, KS
 Atlantic City/Badger Field, NJ
 Grumman-Bethpage, NY
 Beaver County, PA
 Suffolk County, NY
 Westmoreland County, PA
 Eastern West Virginia Regional, WV
 Glenn L. Martin State, MD
 Schenectady County, NY
 Bolton Field, OH
 Anderson Municipal, IN
 Phelps Collins, MI
 Columbus Bakalar Municipal, IN
 Elkhart Municipal, IN
 Gary Regional, IN
 Lost Nation, OH
 Springfield Municipal, OH
 Waukesha County, WI
 Rentscheler, CT
 Quonset State, RI
 Coeur D'Alene Air Terminal, ID
 Gillette-Campbell County, NY
 Lake City Municipal, FL
 Naples Municipal, FL
 Brookley, AL
 Bartow, Municipal, FL
 Witham Field, FL
 Titusville-Cocoa, FL
 Troy Municipal, AL
 William P. Gwinn, FL
 James Connally, TX
 Clinton-Sherman, OK
 Majors, TX
 Univ of Oklahoma/Westheimer Airpark, OK
 Glendale Municipal, AZ

TCAS OPERATIONS AND USE

Mr. CARR. So we can make some comparison. In a way, it is really not fair to those communities that have stepped up to the task.

I mean, they have bellied up to the bar, as the saying goes, and then somebody down the road can't get rid of their addiction. They have made the commitment. They have done what they needed to do, and it is not fair to them that we would continue these other towers.

Well, we have a number of other questions for the record on that that we will be asking you.

Let's talk just briefly about TCAS operation and use.

Over the past 18 months, we have heard a number of reports about continuing operational problems regarding the traffic collision and avoidance systems or TCAS. Can you update us on the FAA's efforts to resolve the software problems in the program, and is better training necessary?

The Airline Pilots Association believes that TCAS simulations need to be required for pilot aircraft simulators. I am wondering whether that would help solve any TCAS problems.

Mr. BRODERICK. Better training always can help. We are going to somehow work with the industry, whether it is in a regulatory or nonregulatory way to ensure that when TCAS is installed in all the aircraft in the fleet, that we have an appropriate kind of TCAS, in the training simulators in the airlines.

The TCAS program is going very well. We have over 10 million hours of operation with it. The newest logic was just approved for installation last month and all three vendors are on various time scales to put a new 6.04, it is called, version of the logic into their systems.

We will also be proposing, more for the record than anything else, a mandatory change, so that people would be required to install that new logic if we enact the proposed regulation. As you know, by the end of this year, all aircraft with 30 or more seats that are operating in U.S. airspace will be required to have TCAS.

It is not by any means a perfect system. We still need to continue our efforts on controller training, inspector training and pilot training, but it has come an awfully long way and it is doing a good job.

OVERSEAS PERSONNEL

Mr. CARR. On the matter of overseas personnel, how many people does the FAA have overseas?

Mr. MCDANIEL. We have authorization for approximately 200. We have actually 157 in place overseas.

Mr. CARR. And typically, what do these folks do?

Mr. MCDANIEL. The principal occupations are security, which provides both a liaison with governments and security inspection liaison at individual airports.

Another major occupation is Flight Standards inspection, which is surveillance of U.S. air carrier operations and facilities which service them for safety purposes.

Third major occupation is flight inspection. We do for the Defense Department flight inspection of military facilities, including overseas facilities, and a significant number of these people are associated with that.

There is a fourth category of people which are principally liaison in representative activities. These are at strategic locations, there are about 10 representatives that we have, government-to-government liaison people.

And finally, there is a category of technical assistance that we have provided on a reimbursable basis to certain countries. For example, we have, I believe, eight people in Spain, which is assisting them with the modernization of their traffic control system and the regular regulatory program. We also have people posted in Saudi Arabia on a reimbursable basis doing very much the same thing.

Mr. CARR. Would you please, for the record, give us a breakdown of the major job categories?

Mr. McDANIEL. Certainly.

[The information follows:]

LIST OF FAA PERSONNEL STATIONED OVERSEAS

COUNTRY	PP-SER -GR	SALARY	TITLE
ARGENTINA	GM-1801-14	058515	PRINCIPAL SEC INSP
BELGIUM	GS-0080-14	056627	INTL SECURITY OFCR
BELGIUM	AD-0341-00	044566	ADMINISTRATIVE ASST
BELGIUM	AD-0301-00	055707	TECHNICAL ASSISTANT
BELGIUM	GS-0301-14	073619	EXECUTIVE OFFICER
BELGIUM	GM-0301-15	083262	INTL LIAISON REPRES
BELGIUM	AD-0301-00	035812	ADMIN CLERK
BELGIUM	GS-0318-08	032710	SECRETARY (TYPING)
BELGIUM	AD-0322-00	035364	CLERK-TYPIST
BELGIUM	ES-0340-00	101800	DIRECTOR EAMEO
BELGIUM	GM-0340-15	086589	DEPUTY DIR EAMEO
BELGIUM	GS-0341-11	033623	ADMIN OFFICER
BELGIUM	GS-0341-11	034744	ADMINISTRATIVE OFCR
BELGIUM	GS-0855-14	067955	GENERAL ENGINEER
BELGIUM	GM-0861-14	063235	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	066069	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	068588	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	069846	AEROSPACE ENGINEER
BELGIUM	GM-0861-15	086226	SUPV AEROSPACE ENGR
BELGIUM	GS-1825-14	064179	ASI OPS
BELGIUM	GM-1825-15	081781	MANAGER, SAFETY INSP
BELGIUM	GM-1825-15	079932	SUPV ASI
BELGIUM	GM-1825-15	079589	AVN SAFETY INSP MFG
BELGIUM	GS-2152-14	071731	ATC SPECIALIST
BELGIUM	GM-2152-15	086223	SUPV ATC SPECIALIST
BELGIUM	GM-2181-14	073619	FLIGHT TEST PILOT
BELGIUM	GS-0303-07	024988	STAFF ASSISTANT
BELGIUM	GS-1801-13	057502	AVN SECURITY SPEC
BELGIUM	GS-1801-13	051114	AVN SECURITY SPEC
BELGIUM	GS-1801-12	040298	AVN SECURITY SPEC
BELGIUM	GS-1801-13	049517	AVN SECURITY SPEC
BELGIUM	GS-1801-13	049517	AVN SECURITY SPEC
BELGIUM	GS-1801-13	047920	AVN SECURITY SPEC
BELGIUM	GS-1801-13	055905	AVN SECURITY SPEC
BELGIUM	GS-1801-13	052711	AVN SECURITY SPEC
BELGIUM	GM-1801-15	071049	SUPV CIV AVN SEC SP
BELGIUM	GM-1801-15	086589	SUPV AVN SECURITY SP
BELGIUM	GM-1801-15	085853	SUPV AVN SECURITY SP
BELGIUM	GM-1801-14	060403	CAS LIAISON OFFICER
BELGIUM	GM-1801-15	070250	SUPV AVN SECURITY SP
BELGIUM	GM-1801-14	058515	CAS LIAISON OFFICER
BAHAMAS	WG-4749-10	021016	MAINT MFGH
BRAZIL	GM-0301-15	086589	FAA REPRESENTATIVE
FRANCE	AD-0318-00	038024	SECRETARY
FRANCE	GM-0301-15	086589	FAA REPRESENTATIVE
FRANCE	GM-1801-14	073619	CAS LIAISON OFFICER
WEST GERMANY	GM-0301-13	052711	A/C AVN MNT OFF
WEST GERMANY	GS-0318-05	018951	SECY (O/A)

WEST GERMANY	GM-0340-15	074380	MGR, FIFO
WEST GERMANY	GS-0341-11	042591	ADMIN OFF
WEST GERMANY	GS-0856-12	045670	E ELEC TECH
WEST GERMANY	GS-0856-11	036986	ELEC TECH
WEST GERMANY	GS-0856-12	047013	ELEC TECH
WEST GERMANY	GS-0856-11	042591	ELEC TECH
WEST GERMANY	GS-0856-12	047013	ELEC TECH
WEST GERMANY	GS-0856-11	039228	ELEC TECH
WEST GERMANY	GS-0856-11	036986	ELEC TECH
WEST GERMANY	GM-0856-13	059372	S ELEC TECH
WEST GERMANY	GS-1825-14	064179	ASI AW
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GS-1825-14	064179	ASI OPS
WEST GERMANY	GS-1825-14	060403	ASI AW
WEST GERMANY	GS-1825-14	064179	ASI AW
WEST GERMANY	GS-1825-14	062291	ASI AW
WEST GERMANY	GS-1825-14	056627	ASI AW
WEST GERMANY	GS-1825-14	056627	ASI AW
WEST GERMANY	GS-1825-14	062291	ASI OPS
WEST GERMANY	GS-1825-14	060403	ASI AVIONICS
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GS-1825-14	069843	ASI OPS
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GM-1825-15	076602	SUPV ASI OPS
WEST GERMANY	GM-1825-15	086589	MANAGER, SASI
WEST GERMANY	GM-1825-15	066609	SUPV ASI AW
WEST GERMANY	GS-1910-11	041470	QL ASR SP AERO
WEST GERMANY	GS-2181-13	055905	ASIP
WEST GERMANY	GM-2181-14	060403	ASIP
WEST GERMANY	GM-2181-14	070161	ASIP
WEST GERMANY	GM-2181-14	058515	ASIP
WEST GERMANY	GM-2181-15	070032	S ASIP
WEST GERMANY	GS-0303-07	023474	ADMIN OFFICER
WEST GERMANY	GS-1801-13	047920	AVN SECURITY SPEC
WEST GERMANY	GM-1801-14	056627	CAS LIAISON OFFICER
ITALY	GM-0301-15	079563	FAA REPRESENTATIVE
ITALY	AD-0341-00	050599	ADMIN ASSISTANT
ITALY	GS-1801-12	041641	CIVIL AVN SEC INSP
ITALY	GS-1801-13	059099	AVN SECURITY SPEC
ITALY	GM-1801-14	056627	CAS LIAISON OFFICER
ITALY	GM-1801-15	068829	SUPV AVN SECURITY SP
JAPAN	GS-0301-12	041641	A/C AVN MNT OFF
JAPAN	GM-0301-15	085114	INTL AVIATION SPEC
JAPAN	GM-0340-15	081046	MGR, FIFO
JAPAN	GS-0341-11	042591	ADMIN OFF
JAPAN	GS-0856-12	042984	ELEC TECH
JAPAN	GS-0856-12	047013	ELEC TECH
JAPAN	GS-0856-11	053623	ELEC TECH
JAPAN	GS-0856-11	042591	ELEC TECH
JAPAN	GM-0856-13	049517	S ELEC TECH
JAPAN	GS-1910-11	038107	QL ASR SP AERO
JAPAN	GS-2181-13	062293	ASIP
JAPAN	GM-2181-14	056627	ASIP
JAPAN	GM-2181-14	062291	ASIP
JAPAN	GM-2181-14	064179	SUPV ASIP

JAPAN	GM-2181-14	056627	ASIP
JAPAN	GM-1801-13	051114	CAS LIAISON OFFICER
JORDAN	GM-0301-15	082523	FAA REPRESENTATIVE
SINGAPORE	GM-0301-15	081786	INTL AVIATION SPEC
SINGAPORE	GS-1825-14	064179	AV SAF INSP (AW) IFO
SINGAPORE	GS-1825-14	060403	AV SAF INSP (AW) IFO
SINGAPORE	GS-1825-14	060403	AV SAF INSP (OPS) IFO
SINGAPORE	GS-1825-14	062291	AV SAF INSP (AV) IFO
SINGAPORE	GS-1825-14	073619	AV SAF INSP (AW) IFO
SINGAPORE	GM-1825-15	077709	SUPV AV SAF INSP IFO
SINGAPORE	GS-1801-12	040298	CIV AV SEC SPEC
SINGAPORE	GM-1801-15	071049	SUPV CIV AV SEC SPEC
SINGAPORE	GM-1801-14	073619	CAS LIAISON OFFICER
SPAIN	FC-0340-13	083330	PROGRAM MANAGER
SPAIN	FC-0810-12	073269	AVIATION SYS ADVISOR
SPAIN	FC-0855-12	075489	ELECTRONICS ENGINEER
SPAIN	FC-0855-12	073269	ELECTRONICS ENGINEER
SPAIN	FC-2152-12	077709	AVIATION OPS ADVISOR
SPAIN	GM-1801-14	056627	CAS LIAISON OFFICER
THAILAND	GM-1801-14	069845	CAS LIAISON OFFICER
UNITED KINGDOM	GM-0301-15	082890	FAA REPRESENTATIVE
UNITED KINGDOM	GS-0318-07	025745	SECRETARY
UNITED KINGDOM	GS-1825-14	056627	ASI AW
UNITED KINGDOM	GS-1825-14	062291	ASI AW
UNITED KINGDOM	GS-1825-14	062291	ASI AW
UNITED KINGDOM	GM-1825-15	068829	SUPV ASI AW
UNITED KINGDOM	GM-1825-15	077712	SUPV ASI
UNITED KINGDOM	GM-1801-14	064181	CAS LIAISON OFFICER
VENEZUELA	GM-1801-14	058515	CAS LIAISON OFFICER
SAUDI ARABIA	FC-0340-12	086589	CHIEF TAG
SAUDI ARABIA	FC-1825-12	071049	AVN SAFETY INSPECTOR
SENEGAL	AD-C 318-00	005100	SECRETARY
SENEGAL	GM-0301-15	077712	FAA REPRESENTATIVE
SENEGAL	GS-1801-13	051114	CIVIL AVN SEC INSP
DENMARK	GM-1801-14	056627	CAS LIAISON OFFICER
AUSTRIA	GS-1801-13	049517	AVN SECURITY SPEC
AUSTRIA	GM-1801-14	062291	CAS LIAISON OFFICER
BAHRAIN	GS-1801-13	047920	AVN SECURITY SPEC
BAHRAIN	GM-1801-14	058515	CAS LIAISON OFFICER
INDONESIA	FC-0301-12	073269	INTL AVIATION SPEC

Mr. CARR. It would seem to me that flight inspections for the Defense Department would be an activity that would be scaling back a bit.

Mr. McDANIEL. That is under examination at the moment.

Mr. CARR. Information supplied to the committee indicates that the cost of a person overseas is, in fact, \$142,000 a year annually. That number would appear to be a little high.

Do you—is there any way we can responsibly pull that figure down a little bit?

Mr. McDANIEL. For the most part, we follow the State Department guidelines governing overseas posting which makes a determination as to allowances and benefits of employees. \$140,000 is really the fully loaded cost of providing those benefits. We have very limited flexibility in how we approach them.

FAA AIRCRAFT LOCATED OVERSEAS

Mr. CARR. Do you keep any aircraft overseas?

Mr. McDANIEL. Yes, in Frankfurt and in Yokosuka, just outside of Tokyo.

Mr. CARR. How many?

Mr. McDANIEL. I don't know the answer to that. Mr. Castleberry may.

Mr. CASTLEBERRY. We have the C-29 aircraft, two in Frankfurt and two in Tokyo.

Mr. CARR. C-29 is the——

Mr. CASTLEBERRY. British Aerospace. C-29.

Mr. CARR. C-29 British Aerospace 800.

Mr. CASTLEBERRY. Yes, sir.

REGULATORY BURDEN FOR AIRLINES

Mr. CARR. When airline representatives were here on March 10th, many of them mentioned that some FAA regulations were burdensome and not justified on the merits.

They mentioned drug and alcohol testing and the security access rule, as a couple of examples of what they were talking about. Is the FAA doing anything to go through the current regulatory scheme of the airlines and trying to update it and figure out which ones are no longer needed, and maybe a few of them might need to be improved, but overall, with a view toward reducing the net cost to the airlines of compliance?

Mr. DEL BALZO. There are a couple of things that we are doing. One, I think we are much more sensitive to the economic health of the industry than we have been in the past. Two, I think we recognize now our responsibility to insure that the economic impact of every regulation that we publish is considered much more comprehensively than we have in the past. We are developing a better economic capability to let us do that kind of economic analysis associated with new regulations.

Tony Broderick will tell you about the kinds of things we are having to do with new regulations. And at the same time Tony will tell you that he has an active program that focuses on the cost burden of existing regulations, which ones are obsolete, which ones

are duplicative, which ones can be streamlined. Tony will talk a little bit about both of those.

Mr. BRODERICK. Just very briefly, I know it is late, Mr. Chairman. We are trying very hard through our advisory committee, which is a unique government organization, to get early input from industry on regulatory costs and benefits so that when we even get to the point of writing a proposal, we understand what their costs are and what their objections may be to a rule so we can fashion it more easily. We have got 71 individual projects going there.

Industry would say, I think, and probably has, that the harmonization of regulations with other countries is very important. That is a major effort we have underway. When we are completed with that, and it will take many years, industry has told us that they'd save a hundred million to a billion dollars. Just in all of the certification and operating rule problems they have. The mode S rule that we changed, the simple change according to the industry, saved them \$8 million. The access control guidelines that we changed last year saved just in one example, Moline, Illinois, I am told, \$200,000.

The alternative noise certification for helicopters was a change, asked for by industry, saved them \$12 million. Finally, the primary aircraft category that we established last year should have up to a million dollars per aircraft certification saving, according to industry estimates in terms of simplified certification procedures. This kind of thing is, as Joe mentioned, very high on our priority list. We are eager to work on any projects that people show us will save industry money without compromising safety.

DISPARITY OF REGULATIONS FOR FOREIGN AND DOMESTIC CARRIERS

Mr. CARR. I have a number of questions in this area that I think we will ask for the record in the interest of time, but I want to get to a little discussion about security and drugs. So I merely want to indicate that I am in agreement with the line of questioning of Mr. Wolf earlier, and some of these questions deal with the disparity or the differential between the regulations of our carriers and foreign carriers. And that is an area of interest of mine. But since Mr. Wolf has asked some questions, we have a number of others for the record, I just want to say that I think it is terribly unfair that our carriers would have to meet standards that foreign carriers don't and that they would be competitively disadvantaged. I would hope that the traveling public would recognize those differentials.

It seems to me that, and I heard this just the other day, there was a person who was telling me how she would rather fly on a foreign carrier. And it had to do with one of those items where she used as an example, how much nicer they were to her when she wanted to keep her glass in her lap, you know, she could sip coffee through the take-off roll and a few other things, and a few other things and it was just that the foreign airlines were much nicer to her than the American airlines and that is why she always chose airline X over airline domestic. And that just seems to me to be terribly unfair, because some of these things do get in—I know they are safety issues.

Maybe you folks could look at these and decide which are really that important. The point is that some of these get to be mixed up with amenities and have such low, low impact on the safety side of the equation given all the risks in an airline operation, that maybe a little relaxation on behalf of competitiveness. But where it is important, we ought to really be telling people it is important and it is important for the foreign carriers to observe in this country even though they may not be legally obligated to do so and the passengers ought to be educated to any laxity in a standard by a foreign government on their carrier so it doesn't get wrapped up in this competitive thing so that our airlines don't carry around a burden. They have enough burdens. They shouldn't have to carry that one.

DRUG AND ALCOHOL TESTING

Mr. CARR. Relating to alcohol and drug testing, a number of complaints from all parties that the rate of 50 percent should be lowered to something like 10 percent. Apparently data shows that only .25 percent of airline employees tested positive in 1992, and only .3 percent in 1991. It would seem to me that the good people who operate airplanes in this country have a good deal of professionalism, not only for the safety of the passengers, but also for the safety of themselves, and aren't likely to be abusers, and that a 10 percent test level would add as much deterrence as a 50 percent test level, and would greatly reduce the costs.

Would you agree or disagree?

Mr. DEL BALZO. On December 15, 1992, we issued an advance notice of proposed rulemaking that responded to requests to reduce the random drug testing rate from the 50 percent level. And the comment period for that advance notice is now closed. It closed on April 14th and we are in the process of reviewing all of the comments that we received. I think the single biggest impediment is the lack of test data for most of the modes.

This Administration is focusing on the need for standardization among the modes. The best test data that is available is in the aviation mode. You look at the test data that we have collected for the past three years, 1990, 1991 and 1992. What you find is certainly less than one percent. The numbers that I have are twice the numbers that you are quoting. In 1990, we look at the half a percent; 1991 is .73 percent, and in 1992 it is .7 percent. So we have three years of program data where the positive rate is below one percent.

When we look at what we recently did within the Department of Transportation, we dropped the random test rate for internal Department of Transportation people to 25 percent. It is not 50, it is 25 percent. Dependent upon our review of the comments, we may or may not agree that the test rate should be lowered. We need a little bit of time to analyze the comments and really pay more attention to what all of this data means. But I agree with you, the test data that we have in aviation is very, very low, like you would expect.

Mr. CARR. I would also tell you that it would seem to me that in aviation and particularly flight crews, the notion of standardizing the tests across the mode is seriously flawed. Comparing people

who operate at an effective altitude of 10,000 feet for much of their productive work day and those that operate at sea level or say below 5,000 feet to include Denver, but most of the population that is closer to being less than 500 feet above the surface, that those kinds of comparisons in terms of just the effects of alcohol and drugs on physiology at sea level versus 10,000 feet is so dramatically different that any comparison across the modes is automatically a bit suspect.

I hope you will be able to educate some people inside of DOT about flight physiology. Some people just don't know about that and they ought to be made aware. Have you estimated the cost to the airline industry of the current drug and alcohol testing program?

Mr. DEL BALZO. We have and I don't have that number. Tony, do you have that number?

Mr. CASTLEBERRY. Mr. Chairman, the alcohol testing program has various rates. The discounts over 10 years at 50 percent done at random for alcohol would be about \$66.6 million, and at 25 percent, about \$46.6 million, and at 10 percent, \$34.1 million. There are benefits calculated across that also. That would be a positive cost benefit ratio of 4.47 at 10 percent and at 2.51 at 50 percent random. So it is a cost beneficial under that concept.

Mr. CARR. There has been some concern about the current technology on alcohol testing. Have you received any information about claims and counterclaims in that regard?

Mr. CASTLEBERRY. Well, we very much believe that the evidentiary breath alcohol test is the right device, but in the session that was held in the three different spots, there were some concerns raised about performance and environments and that kind of consideration. We are working with the Department now on those issues.

FLIGHT CREW ACCESS PROCEDURES

Mr. CARR. We had that one accident where a disgruntled airline employee took a firearm aboard an airplane and ever since then we have had flight crews having to go through magnetometers and slowing them down and generally restricting employees.

One of the things that we went through last year was the whole employee fingerprinting thing and fortunately the FAA, I think, helped us out of that tough situation. Do we really need to do that any more?

Mr. STEELE. Well, I think we are getting to the point now, particularly with some of these FAR Part 107.14 safeguards, the automated access control systems, that we can perhaps find more room to maneuver and relax some of those things because it is now part of the core line of defense particularly at airports.

The one that you have referenced, though, and a special problem we have is access control for the transient air crews, which was recognized even when they started the automated access controls back in 1989. And as you know, the private industry was looking to solve that with a system in which they would work up some universal access control cards, that moved along very well until last year when because of financial distress ATA and the airline indus-

try had to withdraw that support. So we have picked up on leadership to solve that problem. We are optimistic that there are some things that we can do through policy changes to relieve the problem, particularly as far as movement on the ATA itself is concerned for transient crews in getting weather and operations but as far as getting our transient crews access, and these are the ones who are usually not based at that airport. We are probably going to have to make some sort of a decision that will move us toward some sort of a universal card swipe or something like that where we can relieve that particular requirement.

In the meantime, we are encouraging airports and air carriers also to look at alternative means for access. We happen to have one up in Detroit that seems to be working out very well that relieves both the congestion at the security check point and separates out the flight crews because they have an alternate way to move into the sterile area. And we are encouraging more and more of that where we can. But our biggest problem will be in figuring ways to do that. And eventually we will probably have to make a decision which would point the industry towards some sort of a universal system, and as you know there are various systems out there.

One airport may use a key system, another a cipher lock system. Other air carriers have used other things, and then, indeed, airports because of their diversity have installed various other systems. And we think we can perhaps tie all of it together somewhere in our 107.14 program.

Mr. CARR. Well, I hope you can make some progress. It is one thing that runs up the cost to the airlines and if it is not going to be as productive—

Mr. STEELE. And really affects the morale, too, of the air crews. We know, we have listened to them a lot.

Mr. CARR. Well, I know I follow the captain of my airliner through the magnetometer and I don't feel any great sigh of relief that he made it, you know, that the captain is not carrying a gun. It is kind of silly. If he wants to do something to me, he isn't going to need a gun to do it. He is in the front office of that airplane. I mean let's get real! I think it is sort of strange.

Mr. STEELE. If we all knew that that was indeed the captain and he was going to fly. But sometimes, you know, you can't always say that, but we feel that the real solution would be through their media card, which would be a universal card swipe, to be able to look towards something adjacent to the checkpoint in which they would not have to go through the screening but simply swipe their card. Of course, with an automated system and a turnstile, they could move through and yet we still have good assurance that that person is who he or she purports to be.

DETROIT AIRPORT SECURITY SYSTEM

Mr. CARR. Yes. Well, similarly, though, also for the security for passengers. I can't help but think that—and I don't think that there are a lot of major objections to this thing out there, but it is—with the one exception of the Persian Gulf War, it seems as

though every time you ratchet security up a notch, it never comes back down.

It just gets done and people get built into the system and there is a new constituency for it. You know, out in Detroit and over here in National Airport, I go through these systems now and it used to be your friendly old magnetometer and your X-ray machine with a couple of people standing there and they check your bag if they needed to.

Now, you walk in and they have got people in smartly dressed uniforms with walkie-talkies and headsets and you walk through this thing that looks like you are on the Universal Studio set for Star Trek—The Next Generation with all kinds of monitors.

And I am thinking money, this is costing money. And it isn't any better, fundamentally. It isn't providing any greater security. It is just security with pizzazz. It is security with hype. But it is costing me money, it is costing the airlines money.

Why is this happening?

Mr. STEELE. Well, that particular one you speak of in Detroit, was put in by one of the security companies that has a contract with a major carrier in Detroit. The reason they were able to sell that particular system is it has not only provided new capabilities, better lighting, better term ergonomics, and better conditions for the work force there, which are all positive. But the real reason they were able to sell it is they were able to do more with less. They saved a substantial amount of money from what they had spent there under the old system.

So what you are seeing is new better capabilities as the marketplace works. Besides, if they had said that that would cost the carriers more, they wouldn't have bought it. And the only way they were able to tell—

Mr. CARR. I am going to have to get a briefing on that, because that amazes me. It looks expensive.

Mr. STEELE. Actually, they do it with less people and with better capability. Interestingly enough, let me just cite another case. They have been able to save money on things like claims because they keep all those films for a certain period of time and when people make claims that they put a purse through or something like that and lost money, they are able to play that back and save a lot of money on some claims. They'll have some cases for you.

USE OF CELLULAR PHONES ABOARD AIRCRAFT

Mr. CARR. Well, I thank you for that testimony. That is why we have hearings, you learn something. Because the superficial look was that this was just something that was going to cost a lot of money.

I have a burning issue that I would like to talk to you about now. This is something that irritates me as a passenger because I travel on airplanes and I travel with a variety of consumer electronics.

As you know, I have engaged in this issue for the past four or five years and it doesn't seem to be getting any better. In fact, it seems to be getting a lot worse. In 1991, the FCC issued a rule regarding the use of cellular phones aboard aircraft. That rule allowed the use of cellular phones on aircraft at the gate, frankly,

which I think is a little bit too restrictive, particularly on inbound aircraft.

We funded a study between the FCC and the FAA about the use of all kinds of consumer electronic devices. I don't know where that study is and where you are in this process.

I did manage to get one airline to stop saying, as they were saying, that FAA regulations require you to put your phone away. And I went to the top management of the company and said there is no—you are legislating like I can't legislate, there is no such rule.

Well, they stopped using the FAA angle on it. Now they are up front and they basically say we want you to stop using it now. And then they make these vague little statements about how your telephone may interfere with the navigation systems of the airplane.

Well, there is a lot of folklore out there about that. And in the old days of tube-type avionics and anybody who wanted to lug the batteries for a tube-type radio or even some of the older, cruder transistors, there may have been a problem. But we have progressed beyond that electronically now and so we have got this—we have got this study.

What has happened with this study?

Mr. BRODERICK. RTCA has formed a special committee. They have had three meetings. They are making reasonable progress. They owe us and you an interim report in October and a final report next year.

Frankly, progress has been hampered by the recent spate of media attention that started with a story appropriately enough in the grapevine section of Time Magazine seen about what I am now convinced is an apocryphal occurrence of interference on, they said, a DC-10 at Kennedy Airport.

We checked every source that we possibly could and could not find any confirmation of that and are convinced that the event never happened. But nevertheless, there was a tremendous amount of media attention leading to at least one major airline making a public announcement that it was their determination that people shouldn't use any portable electronic devices below 10,000 feet.

We have no real hard evidence that there is a problem that has been caused in the last few years by portable electronic devices and airplanes. It is theoretically possible, of course, to cause problems, and we have heard and read a number of reports of potential interference.

I would say that we are talking about something around 10 or 20 reports that look like it might be possible that some kind of spurious interference was detected in the cockpit as a result of something occurring in the back with either radio telephones that are actually not permitted to be used as you indicated in flight, or some combinations of computers or whatever.

We are working with RTCA and everybody in the industry to try and develop some kind of test methodology that we can use to investigate this further. We are working with folks in our R&D center, Technical Center, to participate in this and trying to do something that is really going to be quite difficult, and that is to prove that it is not a problem.

I think the best that we can do is advance a little bit what RTCA did in their last report. They quantified it, said in their best judgment it was about a one-in-a-million kind of problem, and even then all things had to line up just right. I hope we will be able to get it a lot better than that; that is, to reduce the magnitude of the possibility even further.

It may very well be that we end up in some kind of compromise situation in which we can't absolutely rule it out so that we do something like uniformly ban the use of the devices during phases of flight, particularly close to the ground, although that is something that is troublesome because there doesn't seem to be any rational basis for doing it.

USE OF CELLULAR PHONES ABOARD AIRCRAFT

Mr. CARR. Well, it is disturbing. I appreciate your attention to this. So far as I know, there is an understanding—I don't know that it is a rule by the FCC—that you are entitled to use your cellular phone on an aircraft until pushback. And I think that was not based on radio engineering, it was just decided that that was perhaps a good time in the sequence of a flight to ask people to do such a thing.

Mr. BRODERICK. We communicated with them in their making of that rule.

Mr. CARR. Yes. And also, once the plane is back on the ground, it is my understanding you can pull out a cellular phone and use it on the taxi in? Is that right?

Mr. BRODERICK. From their viewpoint, that is right. As long as you are on the ground, it doesn't matter.

Mr. CARR. As long as you are on the ground, but not on taxi out. They did apparently rule that out, right?

Mr. BRODERICK. I think what you are remembering is the material that was in our draft advisory circular that was recently published. The words you are using are very close to what we were recommending and just got comments on, which were divided all over the map.

Mr. CARR. I would like, if you would help me, and I am going to be asking the FCC the same thing, I would like to have on a sheet of paper what the current regulations are on this.

Mr. BRODERICK. That is easy, yes, we can do that.

[The information follows:]

We will furnish a condensed summary of the Advisory Circular on this subject as soon as the Advisory Circular is adopted.

Mr. CARR. And one sheet of paper, because I am going to keep it in my wallet, I am going to show some flight personnel because they don't know. They have been told by the front office, this is what you say.

I am going to begin educating flight crews about what their company is telling them to say that may not be factually accurate. And then maybe, through their employee organizations, they will do something. If the airline management is not going to listen to me, maybe we can get some of the employee organizations. Because I don't think that people want to get into a fight over this thing.

Lord knows, I have been flying enough hours myself where you are flying along and all of a sudden the instruments go crazy, you don't know why. And if there was somebody in the back seat on a cellular phone, I would blame it on them too. I mean, I know anecdotally how that happens.

Radio engineers tell me that at the wattage, which is, what, a third of a watt or something like that, it is very, very small, that in a cellular phone environment, you would have to have everybody in the aircraft transmitting at the same time to have even a remote possibility of causing some kind of interference.

The other thing is, cellular phone companies frequently use airports as the site of their ground based transmitter. I mean, if there is such a problem here, why are the FCC and the FAA allowing the co-location of ground-based transmitters that are next to all these airplanes in critical phases of flight?

I think it is an overblown situation that I really hope—and I don't want to do it on the basis of the fact that, oh, there is a Congressman who wants to use his cellular phone. Frankly, I turn it off because I don't want them to find me.

But the fact of the matter is, people buy these devices and have a right to assume they can use them until somebody factually tells them that this is unsafe. Scaring people by telling them that if junior pulls out his pocket Nintendo, you are suddenly going to go down in flames is just bizarre.

It would appear to me that we ought to get a simple clarification and then require all the airlines to stick to it. And I appreciate your helping us work through this problem. We were going to do a test, right?

Mr. BRODERICK. As a matter of fact, that is what we are working on with RTCA now, to get agreement on what should be tested and how. We are working with airlines to actually get use of aircraft on maintenance flights and ferry flights and that kind of thing so we can do it in real airplanes.

PORTABLE ELECTRONIC DEVICES ON AIRCRAFT

Mr. CARR. And when is that test? This fiscal year?

Mr. BRODERICK. I hope we can get something started this fiscal year, but this whole project will go over about the next 18 months.

Mr. CARR. And are you working with representatives of the consumer electronics industry as well?

Mr. BRODERICK. They are part of the RTCA group.

Mr. CARR. I just want to say for the record that I got active and interested in this whole area when I saw a dispute take place in an aircraft over these issues and I didn't think that was a good place to have dispute resolved. It had absolutely nothing to do with my personal preferences and I did not initiate my own activity in this area at the bequest of any representative of the consumer electronics industry.

In fact, I think it was about a year ago or a year and a half ago that I was curious because my position on this issue is fairly well-known, and I was curious why nobody even bothered to call me up, so I invited some of them into my office to talk to me about this problem.

I don't think they are anxious for controversy. I don't think they want to be perceived as doing anything that might threaten flight safety, but they too will tell you that, based on electronic engineering, radio engineering, they can't understand what this is all about.

Mr. BRODERICK. There is unfortunately a lot of misinformation floating around and a lot of confusion. And it is a complex subject, it really is. I mean, when you start talking about it with some of the technical people, it very rapidly gets pretty complex.

RADIO TECHNICAL COMMISSION FOR AERONAUTICS (RTCA)

Mr. DEL BALZO. Mr. Chairman, could I take just a 30-second diversion on a subject not related to cellular phones but related to RTCA? You heard Mr. Broderick mention that this subject that you are interested in is being worked for us by RTCA. No cost to the government.

You will hear tomorrow that RTCA has been an invaluable resource to us on working the global navigation satellite system issues and they have currently been charged by us to help us work through Aeronautical Data Link issues. There is a lot more work that we would give to RTCA. There is a funding limitation that is placed on RTCA. They come under the umbrella of the funding limitation associated with advisory committees.

I would tell you that they deliver to us probably \$1 million worth of service just on the satellite work that they did for us, and before they are done on telecommunications, it will be another million dollars.

If there is anything this committee can do to relieve or to remove RTCA from the funding limitation associated with advisory committees, I think it is well worth our investment with them. We can't buy that kind of talent any other way.

Mr. CARR. Well, your point is well-taken. Maybe we will take that under advisement, investigate it, and create a record and maybe we can help you out. I have a couple of questions on the aviation medical examiners program that I would like you to put in the record.

With that, we have been meeting a long time today, and I appreciate your patience and your diligence in being here and being prepared and the cooperation that you have given this Committee.

And with that, we will adjourn this hearing and we will reconvene at 9 o'clock tomorrow morning. It is my hope that we can dispense with facilities and equipment and R&D in a relatively short period of time.

Once again, we had a complete hearing on the AAS issue last week, and I would think that we would not require any more additional information on that point. Members may arrive and ask a question of course. I would hope that we would be concluded by noon.

But with that, thank you. And the committee is adjourned.

TUESDAY, APRIL 27, 1993.

OPENING REMARKS

Mr. CARR. Well, good morning once again. We will reconvene our hearing on the fiscal year 1994 budget of the Federal Aviation Administration and recognize the Acting Administrator for any comments that he would like to make. We spent a long day together yesterday, and today we will receive testimony on facilities and equipment, and research, engineering and development programs.

Mr. Del Balzo, I would like to give you an opportunity if there is anything from yesterday that you wanted to comment on, if not, we will go right to questions.

Mr. DEL BALZO. Mr. Chairman, I think not. I would just introduce three new people who are at the table with us this morning: Martin Pozesky, who you know is the Associate Administrator for System Engineering and Development; John Turner, Associate Administrator for NAS Development; and John Burt, Executive Director for System Development.

FACILITIES AND EQUIPMENT PROCUREMENT REFORM

Mr. CARR. Let's pick up where we left off yesterday. Let's talk about procurement reform as it pertains to facilities and equipment.

In a September 1992 letter, then-candidate Governor Bill Clinton wrote to the American Association of Airport Executives expressing his views of the need for reform of the FAA's acquisition process.

He wrote, "In 1982, the FAA announced a 10-year, \$12 billion plan to modernize the air traffic control system. Today, fewer than half the objectives have been met and the cost has soared to \$31 billion. We simply cannot accept that level of performance."

What specific changes is the current administration proposing or considering to improve that performance?

Mr. DEL BALZO. Mr. Chairman, I think everyone would agree on the need for procurement reform. We certainly do in FAA. I think in fact as we look over the past I would say 18 months, we have made some improvement. I think you heard that improvement acknowledged by GAO yesterday, but the fact is, we are still encountering delays. We are still encountering cost growth and acquisition problems.

It is a high activity and a high priority issue for us. It has had the personal involvement of two previous administrators, and deputy administrators. It now has the personal involvement of myself and the acting Deputy Administrator, the Executive Director for System Development and our Associate Administrators as well.

I think in fact we have put a number of things in place. One of the things I think we satisfied ourselves on is when people talk about procurement reform. Procurement reform needs to start with ourselves. There are enough things we can do just based on our own interpretation of the rules and regulations that will allow us to be much more efficient than we have been.

There are so many things we can do just to tighten up the whole process, beginning with some of the things we talked about yesterday: Better mission needs statements with much more quantifiable data than we have ever had. Following through on recommendations that we have received, one from this committee, two from GAO, and three from the industry itself.

I would ask Monte Belger to talk about the number of things we have put in place and the things we are still working on.

Mr. BELGER. Mr. Chairman, let me start by referring to some of the things we heard yesterday in the discussion with the GAO, if I could, to put that in context and answer your question specifically in terms of what we are doing.

I think all of us agree fundamentally and in principle with the points the GAO made yesterday. We do have a credibility problem in that many of these systems that were started in the late and mid-1980s are behind schedule and they are over cost. I don't think that is a good story. And the fact is, as much as we are doing now with the new programs, until we get out from under that credibility problem with these old systems, we are going to have a problem.

Several years ago, we didn't even know what a mission needs statement was in the FAA. Three years ago, perhaps we didn't even know what a mission needs statement was. In fact the GAO is right; that we did a lot of things to try to put some structure and discipline into a process to do a better job of analyzing our requirements and analyzing the options. But we didn't do that perfectly right out of the box. There are a lot of things we can do still to improve our ability to analyze requirements and analyze options and that is where you start the acquisition process. It is not just the process of buying something, it is starting right out of the box with understanding what your requirements are and understanding what your options are.

The other thing you mentioned yesterday is understanding what the risks are. What the GAO didn't say yesterday was that we recently issued a brand new acquisition order which, frankly, I would stack up against any other government organization. That order very specifically requires a risk management plan to be developed and tracked and updated with each major acquisition. That plan comes very early in the process when you make a decision as to which alternative you are going to go with.

So we are doing a lot of things like that. It will take us time to train and to give folks the tools to do that, but I think we are doing the right things. I think we are doing them, frankly, as quickly as we can.

I mentioned we did issue just recently a brand new acquisition order. It is very comprehensive and user friendly, if I can use that term. It was basically developed for our program managers. We recently issued guidance and directions that requires for each acquisition we look at nondevelopmental items and commercial off-the-shelf items and basically make a decision that those items will not meet our requirements.

The order encourages us to go back and take another look at our requirements if a piece of commercial off-the-shelf equipment comes close to meeting our requirements. I think somebody men-

tioned yesterday a requirement related to a printer where perhaps the piece of equipment off the shelf came close to meeting our requirements but didn't quite. Our process now and our emphasis is, go back and look at that requirement, make sure it really is a valid requirement that precludes you from buying the off-the-shelf equipment that doesn't need any more development.

The processes that we put in place, again I think focuses on discipline, focuses on more structure, focuses on analyzing requirements. And I will just mention one other thing of a long list of things we have done, but we also just recently issued another order which will require that all acquisition policy in the FAA be signed by the Administrator.

Over the years, we have evolved into a process where our acquisition policies have been developed by different people in the organization, perhaps signed by as many 20 different organizations. We now have what we call a configuration management policy that requires all that acquisition policy to come to one point to be signed by one person for consistency, for standardization, and for nonconflict of policy.

There is a long list of things we can talk about that we have done, but I think fundamentally we are on the right track.

ACQUISITION PROCESS

Mr. CARR. Who is that one person?

Mr. BELGER. The Administrator is the acquisition executive.

Mr. CARR. Who helps the Administrator in that function?

Mr. BELGER. I do in my permanent job as the Executive Director for Acquisition Oversight. Many of the specific responsibilities given to the Administrator as the acquisition executive are delegated to me.

Mr. CARR. It really means you are the person? The Administrator is going to be off making speeches running around and taking care of everything.

Mr. BELGER. I think the fact is, that is right, and I think that is probably appropriate.

Mr. CARR. And that is fine. We just want to know where on this particular issue the buck stops.

Mr. BELGER. It is fundamentally with me.

Mr. CARR. All right. And you are going to be the person, then, who is going to make sure that mission needs statements are supported by quantitative information and not just felt need that trickles up with no documentation?

Mr. BELGER. Right. I think that is with me. I am the person who fundamentally approves those for the Administrator at the FAA level. There is a lot we can do to improve our ability to analyze requirements and analyze options.

Mr. CARR. You have put that message out to everyone; that something is not going to get by your desk? You are the final filter before the Administrator signs it and it is not going to get past you unless they have met these requirements?

Mr. BELGER. I think that is fair to say. I will admit that in the four or five month period in which the GAO did their review that they talked about yesterday, that was a period where we were

doing a lot of catch up. We were trying to catch up with this requirement we put in place to make sure that you have a mission needs statement before anything gets in the budget or in the CIP.

We didn't do a perfect job by any stretch of the imagination, and quite frankly, there is a lot of data that exists in the FAA which people perhaps at the lower levels fundamentally understand. But it just didn't show up in the mission needs statements. So there is a lot we can do to improve the quality of the mission needs statements.

Mr. CARR. How many people work with you to help you with that job?

Mr. BELGER. I will answer that in two ways. The staff that we have is about 23 people. Not all of those folks are involved in mission needs statements, but the real staff is the group we call the Acquisition Review Committee. It is a group of senior FAA executives who meet to review each one of the mission needs statements. And even before that happens, we have a group in our systems engineering organization that reviews the mission needs statements from a systems engineering standpoint. But I would say it is the Acquisition Review Committee, primarily, that I would look to for advice and representations on which ones we approve or don't approve.

USER INVOLVEMENT IN THE ACQUISITION PROCESS

Mr. CARR. Another frequent criticism of the FAA is that the agency doesn't adequately consult with the users of the proposed new equipment. We heard some testimony yesterday on the inspection side where you have made some great changes in that regard, and apparently this frequently leads to human factors problems later on, using whatever technology, whatever equipment you have.

We have apparently seen some of this problem in the AAS and TCAS and other programs. Do you have any formal guidance that requires early input by the immediate user?

Mr. BELGER. Yes, sir, we do. I will answer that question in several parts. When I think users, I think internal users and the external users also. Let me talk about both of those also.

Mr. CARR. Right. Because there is another criticism, I heard just last night, that the FAA gets consumed by its internal users.

Mr. BELGER. I was going to mention that, yes. There might be something to that quite frankly.

Let me speak about the internal users first. We have—and AAS might be a good example. I don't want to get into specifics of AAS, but you know the extent to which we went to to get air traffic controllers and airway facilities folks involved in understanding the AAS program, so that is an example of what we have done.

You have to know where to draw the line and where to find the right balance between user involvement and when you need to say enough is enough. This is what we are going to build.

In the new order I mentioned, one of the new requirements is that we will, for each major acquisition, also develop a human factors plan. It will be a plan which will describe what the human factors risks are; what will be done to mitigate those risks; who will be involved, how much involvement, et cetera.

On the external side, I think we heard loudly from the industry folks in the last three months when we have put emphasis on the AAS program that they want more inputs in terms of requirements.

In the last year and a half, in my job we have met several times with the people that we do business with in the electronic industry association. We have what are called roundtable meetings where we heard from them, what their issues and concerns are, how they would like to see us do business differently from the acquisition standpoint.

I mean we want the user input. We want the external input. We want to make sure our internal requirements are consistent with their external requirements, so that we are buying the things that will give them the benefits.

NEW ACQUISITION ORDER

Mr. CARR. This guidance that you have, would you give the Committee a sample of some of that? Maybe you have a procurement book. We don't need it today.

Mr. BELGER. I just happened to bring one.

Mr. CARR. You probably carry that around with you everywhere, don't you?

Mr. BELGER. I have one under my pillow.

There is the order which prescribes the FAA's acquisition policies and procedures. It is organized into four or five sections. The first section is fundamentally policy. It tells a program manager, it tells anybody these are the fundamental policies and priorities of the FAA's acquisition program. There is a section that requires a mission analysis capability before you ever get to deciding what it is you think your requirement is. That is the section that we require a risk managements plan and those types of things. Then each of the subsequent sections are basically broken down into the phases of an acquisition. There is very specific guidance on what ought to be in a mission needs statements, who approves it, where does it go, what is the Department's role, what are the types of specific things that you need to address in a mission needs statement and then it takes each of the phases.

As you go from a mission needs statement to the second key decision, which is the point at which you actually decide which alternative is the best, it lays out very clearly what you need to bring to the Acquisition Review Committee for the committee to make a decision.

So it is comprehensive. It is not nearly as complex as I think you might see in some other government orders, but it is clear. It has charts, it has road maps, just give you a quick——

ACQUISITION TRAINING SESSIONS FOR MANAGERS

Mr. CARR. Do you have training sessions for those managers?

Mr. BELGER. We do. We have training sessions for our program managers and that is one of the things that we are focusing on for the future, though, to improve. It is clearly not just enough to write an order, get the Administrator to sign it, and then walk away from it and expect 50,000 people in the FAA to understand

and do it. We are working on updating the training programs that our program managers get to include these procedures in those training programs.

Mr. CARR. Do you have a dedicated training staff or is this something that you just pull a couple of people in on an ad hoc basis to do training.

Mr. BELGER. I will answer that two ways. We do have training experts in our Human Resource Organization, but John Burt, myself and John Turner have worked closely to get our experts together to have a lot of input into this training scenario.

Beyond that, if I could just mention, we are working with the Department of Defense using some of their expertise to develop what I will call simply a lessons-learned type of training scenario, a case study training session. Maybe two days, maybe three days, that would literally allow our program managers to go through, much like you would in a university, a case study of an acquisition that didn't go well, a study of an acquisition that went well, and learn from that. FAA examples. Real world examples. We are working on those kinds of things.

Mr. CARR. Well, you have some examples.

Mr. BELGER. We have a few that we could use.

LANDING SYSTEMS DEVELOPMENT

Mr. CARR. Let's turn to landing systems development for just a few minutes. Could you describe for us the status of your development contracts for microwave landing systems and tell us what the FAA believes the MLS role will eventually be, particularly as we talked about yesterday, given the initial enthusiasm for GPS?

It may well be, as we talked about yesterday, that the delay in MLS may end up being a success story inasmuch as there are other alternatives which are on the horizon to do the same job. What is the newly defined role of MLS?

Mr. DEL BALZO. I think that picture has become clear to us over the last 12 months. I told you yesterday that I took issue with two things that GAO reported on yesterday. One of the things I believe that we just have a fundamental disagreement with GAO on what it is we are doing in the landing system area. I believe what we are doing is totally consistent with the recommendations that we heard yesterday.

So here are the things that we are doing in a larger context. One, we have decided to stop procurement of Category I Instrument Landing Systems after 1995, except where they are needed for replacement. We believe that GPS has the potential to meet Category I requirements enhanced by maybe up to 20, what we call, wide area differential stations. But nevertheless, we believe that that can be done.

We remain committed to having microwave landing systems at international airports by 1998. We awarded as you know contracts to both Raytheon and Wilcox in June of 1992 to develop Category II, Category III MLS first article systems for testing. We have an aggressive research and development program to determine the feasibility of GPS to provide Category II, Category III capabilities. We won't have an answer to that question until 1995. We are re-

serving the award of a production contract on MLS until we have that answer. The work that we are doing with MLS is to take us up to the points of having these first article test systems for Cat II, Cat III, until we get an answer on GPS final capabilities. All of that will get discussed at a worldwide ICAO meeting in 1995. So it all comes together.

The part we take issue with in what GAO said yesterday is our policy should be to have a minimum number of different landing systems in operation and, yes, we do runway-by-runway analysis to determine the kind of performance capability that is required.

But when we stabilize, we will not have ILSs for Category I, and we will have either MLS or GPS or both for Category II, Category III. But we will not have a wide inventory of landing systems throughout the United States.

I think we have a coherent program. One answer is still required and that will come in 1995—How best to meet Cat II, Cat III requirements?

Mr. CARR. Just to clarify for the record, when you say Category II and Cat III development by 1995 an answer, are you speaking fiscal year 1995 or calendar year 1995?

Mr. DEL BALZO. Calendar 1995.

Mr. CARR. Is there money in your request pointing toward that 1995 date? Is it in your R&D request?

Mr. DEL BALZO. Yes, there is money in the R&D request.

RUNWAY ANALYSIS FOR LANDING SYSTEMS

Mr. CARR. You say you have a runway-by-runway analysis.

Mr. DEL BALZO. That runway-by-runway analysis is the kind of analysis we do today to establish an instrumental landing system. We will do an analysis of that need at a particular runway at an airport. We would do the same kind of analysis for a Category I, II, or III capability in the future.

The only difference is the analysis that we will do will not be for an instrument landing system, it will be for a microwave landing system in the event that GPS is not capable of meeting the Cat II-III requirement.

Mr. CARR. Do you have a runway-by-runway database today which is an facilities and equipment type database.

Mr. DEL BALZO. Yes, sir.

Mr. CARR. At some point, I would like to see that if you could. Tony, you seem to be saying it is on paper.

Mr. BRODERICK. It is in a computer.

Mr. CARR. It is in a computer. It is not very easy to—

Mr. BRODERICK. We could.

Mr. CARR. It is not easy to retrieve the data?

Mr. BRODERICK. If you want special runway runs for example. We do it routinely for every single project we do. We do it at two levels, an initial screening and then we do a detailed benefit cost for each runway.

Mr. CARR. Well, I would really like a briefing and/or a visit to see what you are doing. I am particularly interested in how you compare one runway with another or don't you do that?

Mr. BRODERICK. Do you mean for alternatives?

Mr. CARR. I am getting back to investment types of criteria. How do you decide which runway you are going to move on first?

Mr. DEL BALZO. What we have is a spread sheet that will show you the cost benefit ratio of an ILS at every airport in the United States. We have a spread sheet that says, well, if you only have so much money, this is where we would stop if you have a little more money, this is where you would stop. But we do have actually cost benefits ratios runway by runway for ILS installation.

MLS COSTS

Mr. CARR. I think this Member of Congress would like to learn more about that and I know the staff will, because it fits into some of the work we are doing on trying to create standards for investment decisions.

What is the total cost to develop and procure MLS? And can you talk about the justification of that cost if we buy a significantly lower number of systems than the original 1,200 planned last year?

Mr. DEL BALZO. I would ask John Turner to provide the details.

Mr. TURNER. I am sorry. We were talking on the matter and I missed that.

Mr. CARR. Let me rephrase the question. Since you are going to procure fewer MLSSs, presumably the cost per MLS is going to rise. So we want to know what the new total cost is going to be both in absolute numbers and per unit.

And then how do you justify that new, probably higher, unit cost.

Mr. POZESKY. Let me try that, Mr. Chairman. If we limit our MLS procurement as Mr. Del Balzo said to Cat II and III locations, and even if we put in international runway ends protecting the option that we may need that, we are still talking 200 to 300 MLSSs, and we see the system bill at about a million dollars per MLS system.

That will, of course, depend upon the prices we get out of the contractor. So we are talking 200 to 300 million plus development. We will wind up adjusting our cost benefit criteria for establishment of the higher cost MLS if MLS costs go up. We have just talked about the cost of establishing the facility. So if you could get cheaper MLSSs, in concept, you could on a cost benefits basis justify them in more locations, so we will adjust that criteria based upon the cost of MLS.

Our planning for the MLS program, including the development of the prototype costs is carried in our CIP plan at about a \$500 million level for Cat II-III and international runway ends.

Mr. TURNER. Let me add one piece and that is that we have two contractors now doing the development, Raytheon and Wilcox. We do not have production costs. That is the advantage of having two. We will then have competition in the 1995 time frame, 1996, as to how many units, production, whether we want to make that multiyear, how we want to set that up at that time. And based on that, we should get a good price for what we want to put in.

Mr. CARR. Well, you should, but I guess I am not real clear, Marty, on your testimony. This is an important point and I want to make sure I have it clear in my mind.

You seem to indicate that we are going to buy 200 to 300 MLSs and they would come in at about a million apiece.

Mr. POZESKY. The installation costs and everything?

Mr. CARR. With installation and everything.

Mr. POZESKY. Right.

Mr. CARR. Your last comment, about \$400,000 for the hardware, would you explain that?

Mr. POZESKY. What I was trying to say and didn't say it very clearly—let me back up and do the whole thing for you.

Before GPS entered the picture, our plans went as far as buying roughly 1,000 MLSs and of that 1,000, roughly 700 of them were Category I. And we are talking about projections plus or minus 10 or 15 percent probably through the year 2005.

With GPS entering the picture, we can take the Category I MLSs off that scenario leaving Category II and Category III, which I think currently are about 200 systems and are projected by 2005, 2010, to go to 300 systems. So if you multiply 300 by a million, you get \$300 million.

That is the production and installation costs. The cost of the current development program, if my memory serves me right, is about \$200 million we are projecting for the cost of the total dual prototyping program. So that is \$300 million plus \$200 million. That is how I got to \$500 million.

The production costs—let me state it again—our planning for the production costs, including installation if we go to Cat II, Cat III, is about a million dollars a system.

DECISION ON GPS VS. MLS

Mr. CARR. Thanks for clarifying that for me. While the FAA has agreed to rapidly implement GPS for Category I and while your objective is obviously to develop MLS for Category II and III, the question is GPS in the Cat II and Cat III environment. This is where the GAO has said that the FAA has some options, so we don't know—was the 200 by—what was that date?

Mr. POZESKY. 2010, I think is the date I—

Mr. CARR. I thought you said 300 by 2010?

Mr. POZESKY. Okay, 1998 is the ICAO transition date.

Mr. CARR. And that is 200?

Mr. POZESKY. That is roughly 200, that is correct.

Mr. CARR. I guess the point is that what we have here is we have GPS where we think that is going to be useful in a Cat II and Cat III environment, you have MLS for a Cat II and Cat III environment. It seems as though you have a technological horse race here, one of which is a little further along than the other.

How do we know that we are going to need, hypothetically, any MLS systems?

Mr. DEL BALZO. We won't know that until 1995. 1995, we will know whether or not GPS can meet the Category II, Category III requirement. So we would not commit ourselves to an MLS production decision until we answer that question.

Can GPS meet Cat II, Cat III? And if the answer turns out to be yes, we then have an international process to work through getting

GPS accepted as an international standard either equivalent to MLS or instead of.

Our goal would be to have one system meeting the Cat II, Cat III requirement. The only system that can meet that requirement today is MLS. We don't know whether or not GPS can meet that Cat II/III requirement. We will know that in 1995. And we will not spend any production money on MLS until that question gets answered.

Mr. CARR. Okay. That is good. We are not going to make any production decisions on MLS until——

Mr. DEL BALZO. 1995.

MLS COSTS

Mr. CARR. 1995. So in the meantime, what are we spending our MLS money on?

Mr. DEL BALZO. Spending the MLS money on the development of a Category II, Category III first article for testing. In the event that GPS cannot meet the Cat II, Cat III requirement, we would still be on a schedule to meet the 1998 international date.

Mr. CARR. How much money are we talking about for this development? This is mixed up with the R&D. I guess we cannot separate these things out.

Mr. DEL BALZO. In fiscal year 1994, we are looking at \$46 million.

Mr. TURNER. The two contracts from Wilcox and Raytheon came in at approximately \$70 million each for this development cycle and that is six articles each that we will use in the testing.

Mr. CARR. And that is \$70 million for two years, essentially; is that right?

Mr. TURNER. About three years.

Mr. CARR. Three years?

Mr. TURNER. There is no production money until 1996, so you will not see production money come about until 1996. But there is money in the line item for the two contractors for programmatic support, for the testing and all the other aspects that go with a preproduction model.

Mr. CARR. Is the \$46 million split evenly between Raytheon and Wilcox?

Mr. TURNER. Yes, for 1994, that is correct.

Mr. CARR. Looks like you have a chart there. What are you going to ask for in 1995?

Mr. TURNER. 1995, we would be looking at \$35 million.

Mr. CARR. Well, I am coming up short here somewhere. What am I missing?

Mr. TURNER. There is 1993 money also.

Mr. CARR. How much is in there?

Mr. TURNER. That was \$45 million.

Mr. CARR. I am still coming up short.

Mr. TURNER. 1992 money. 1992 money, we had \$55 million in 1992.

Mr. CARR. Okay. I guess one worry here is that you spend all this money on MLS and then are not really hard-nosed when it comes decision time.

Mr. DEL BALZO. I don't think we will have a choice. What makes sense to us is to have an all-purpose navigational landing system. So we are aggressively trying to push GPS to the limits that we can get a Category II, Category III capability out of GPS. We believe that would be the most cost effective solution to the Cat I, Cat II, Cat III landing problem.

The difficulty we will have will be negotiating that internationally. That will take some time. But in the event that that cannot be done, in the event we discover that GPS cannot meet the Cat II, Cat III requirement, we believe it is a good investment on the part of the United States to continue on with the development program if for no other reason than U.S. leadership.

We have two good contractors in place, the technical risk to completing that program, we believe, are very, very minimal. It is not a technology issue. We have gotten off to several bad development starts in the past. I think it is important that we finish this through to completion.

IMPACT OF DECISION FOR MLS PRODUCTION

Mr. CARR. Well, I probably would agree with you. It is just a worry, though, that you get people involved and careers involved and jobs involved in the MLS alternative and that becomes a force to be reckoned with in trying to throttle that back if you come up with an honest decision that GPS is a better alternative.

Mr. DEL BALZO. I would be concerned about that, too, if we could not articulate the policy and criteria at this time leading up to a decision. I think our policy is clear, that we know what it is, is that—we know what the answer is to meet Category I requirements. We believe that there are two candidates for Cat II, Cat III. We know what our preferred answer is, and I think we have the right kind of flow leading to the right decision.

Mr. CARR. I think that may be easier for you than it is for the Congress, however. That is the problem. Because I think that in that regard I would have a higher degree of confidence in the FAA's decision-making than I would in the United States Congress' decision-making once you have some kind of a lopsided political arrangement going on here.

It is inherent in any R&D effort, I might say, that one of the answers is never to do R&D and that is not an answer that I would choose. I think the risk is political and we have to muster the political will to do the right thing, but it is hard. It is hard.

Once you create those constituencies out there, once you create those jobs, once you get families committed to a certain option from an economic point of view, it is very, very hard to turn that off.

So now we have a horse race where it seems one horse is halfway around the track and the other horse is just getting into the starting gate and the race is not even at this point. I don't know how you could ever manage one. Technology doesn't fall out that way.

But it is a problem and I think we should identify it and put all those folks at Raytheon and Wilcox on notice that this is not a done deal, that two years from now, three years from now, when a production decision comes, it may not be there, this Committee

might not be there because we have to look and seriously keep open the option of GPS.

Do you want to say something, John?

Mr. BURT. I think we have been very clear and honest with the management of those two companies, and in fact with the recognition now that the GPS can do the Category I job. We have eliminated the Category I MLSs from future years in the CIP which will be published in another couple of months. I think that will send a signal to everyone that we are serious when technology shows the better way to go, that is the way our planning will go.

I don't know whether that will make it easier for you or not, but we have been clear in discussing this with the management of the companies. There is no guarantee that they should keep that in mind. The horse race is to be ready for them to compete with each other if we have a need to buy these.

They know about the ICAO meeting in February of 1995 and we have kept them involved, I believe. Whether they are flowing that down through their company or not, I can't say.

ICAO MEETING ON MLS USE

Mr. CARR. Where is the ICAO meeting to be held, do you know? Has that been determined yet?

Mr. POZESKY. It is likely to be in Montreal, Mr. Carr. It will be a worldwide meeting called specifically for the purpose of considering what we are going to do about MLS and do we need to go on with that. There are a lot of different pressures.

I might take a moment to comment again that we certainly have many of the same sympathies you do. From the very clear decision two years ago to enter this new technology, it is hard for us to manage as well in all the forums we find ourselves, both domestically and internationally. There are lots of different pressures.

We are starting inside the FAA with the Defense Department's participation, kind of an oversight process, to manage just the staff work associated with this decision. And their staff work transcends everything from what the technology will support to what institutional issues there are in terms of ensuring the availabilities of the signal 100 percent of the time. So it will be a significant undertaking and there are lots of different pressures.

For example, I can think of one European country now that has no Cat I systems internationally. So they are not interested in GPS for Cat I. Doesn't do anything for them.

Mr. CARR. What country is that?

Mr. POZESKY. The U.K. Virtually all of their international runways are Category II and III, so they are not interested in GPS for Cat I. It doesn't help them out of their problem at all. You have those types of pressures to contend with.

And when you look at what is going on internationally and domestically, it still makes a lot of sense for us to continue with the MLS development.

GLOBAL POSITIONING SYSTEM

Mr. CARR. Let's talk about GPS for a minute. There have been some recent press reports. I guess we are in a position of trying to

move it internationally. It is all wrapped up with who controls it; foreign countries not wanting a system controlled by our military. Where are we at on the control issue?

The Secretary has said a few things. Maybe you can refine what the Department's position is on this.

Mr. DEL BALZO. Marty Pozesky is part of a DOD-DOT working group that is addressing that issue. I will ask Marty to give you a status report.

Mr. POZESKY. We are sensitive to the issue. The issue does carry weight in the international forums, but I must add, Mr. Carr, the issue carries a lot of weight domestically as well. If we are to use GPS as a replacement to Category I landing systems, we, the FAA, have an obligation to ensure that that system is sustained for the future as well.

So it is not just an international issue. It is just as much a domestic issue in terms of ensuring the longevity and capability of a GPS system.

Secretary Pena and Secretary Aspin have jointly chartered a group to look at this question of joint civil-military operation of the GPS system. I might add that the military, at least in my conversations with senior military officials, are sympathetic.

They understand that this system will probably gravitate to become a national system before it is all over and done. We are looking at the issues of joint management, joint operation. The group has had two meetings thus far. It is hoped to have a preliminary report out in July or August identifying the issues and some of the alternatives to deal with the issues.

But inside both the Defense and Transportation Departments, at least that I have detected so far, there is an understanding that if the civil community needs to go to this technology, we have to make sure it is sustained. I might also add it is very likely, as you well know, when we are all said and done, aviation will turn out to be one of the smallest transportation users of the GPS system.

Intelligent vehicle highway systems and other technology that Transportation is looking at is going to make use of that technology. That is why this group is a DOT-DOD effort, and I am the FAA rep on the group. But the Coast Guard is represented. Highways and Maritime are with the DOD.

So I guess the short answer is that the issue has been identified, it has Secretarial level support to at least ferret out the issues and put them on the table so that we can look at them and address them. The first output probably will be July or August.

Mr. CARR. Well, use your crystal ball. If this thing is going to go at all, it really has to go as a civilian system.

Mr. POZESKY. My crystal ball is that GPS will be a jointly operated military-civil system. We have had lots of examples of that in the past. It has always worked very, very well. My crystal ball says that we might—and this is where it gets contentious—we might even think someday about the civilian community funding a portion of the GPS operations.

There are enhancements to the GPS satellite network that could serve the civil community very well and we need to talk about those inside the administration and to decide how best to achieve

those enhancements. But I see the day when GPS will be a joint civil-military operated system.

Mr. CARR. Well, touching on funding is when it becomes very important to this Committee.

Mr. POZESKY. I understand.

GPS: DOD ISSUES

Mr. CARR. I think this committee is ready and willing to take the responsibilities for funding GPS, and I don't see that as being a problem here. I think we can work that out. But if we are going to have a GPS system that will be accepted worldwide, I think it is important that we be aggressive about the civilian control.

What are the issues from the DOD point of view?

Mr. POZESKY. Obviously my understanding of those issues is probably limited because I don't have full exposure personally to the range of DOD missions. But it is obviously the issue of accuracy, security, and control. Again, let me just emphasize that so far this is being well received in the Defense Department and I am optimistic about coming forth with a coordinated plan.

We are talking three or four years from now probably. Nothing will happen next year or in the next budget year, but clearly if the country is to start using this technology from everything from civil applications, aviation applications to highway applications, it will have to be a joint civil-military system. We will have to assure ourselves that the system will be available and around when we need it.

GPS: INTERNATIONAL REACTIONS

Mr. CARR. What can you report on early international reaction? Put on the record some of what the international community is saying about what we are doing and how they are reacting to it.

Mr. POZESKY. Let me start off, sir, with introducing the committee to the work that RTCA did last September where we called together 200 or 300 people and had a task force on GPS, and I will be happy to leave the committee a copy of this.

But basically the important point to be made is that this was a user activity—not internal FAA users, although there were plenty of internal FAA users involved—but lots of external users, AOPA, ATA, the whole gamut. And we had strong, strong endorsement to getting on with this technology.

Second thing I would report, that you probably are aware, that the U.S. has offered to the international community, coordinated U.S. position, the availability of the standard positioning service of GPS free of charge, and, key to the international community, with six years notice in the event it should ever be withdrawn. That offer has been received generally with some satisfaction.

The reaction is mixed. Canadians, for example, are very, very supportive of using this system. The Europeans at the moment are concerned about U.S. ownership and U.S. withdrawal of service. We are working our way through that issue.

My guess will be that ICAO will want to define a system for the future which will be GPS compatible, and again my crystal ball says that the world will start out using GPS and there may be 15

or 20 years from now a replacement system which the international community would call GNSS, Global Navigation Satellite System, which will be GPS compatible.

John Burt reminds me there are several small countries that are very enthusiastic. In fact, the nation of Fiji in the South Pacific is planning an entire air traffic control system based upon GPS and we are working with them now to develop that system.

So I would say that at the moment the reaction in the international community is mixed. We have many people who are very, very comfortable with GPS. We have made the point that GPS is going to be a utility and the U.S. will not be able to turn it off because of its internal domestic uses. There is still concern in other nations about U.S. control and ownership and that is still ahead of us in terms of whether they are going to agree to a full GPS system or not.

In any event, anything that ICAO comes up with in the future, anything, we all believe will have to be GPS compatible. So we will see early use of GPS internationally without a question.

GPS FOR PRECISION APPROACHES

Mr. CARR. Sliding back to the GPS for precision approaches, there are two pieces of testimony I would like to get from you if I can. Would you say there is at least a 50 percent chance that GPS will eventually be certified for Cat II and III?

Mr. POZESKY. I am less optimistic than some of my colleagues about that not because of the accuracy requirements, but because of the availability requirements. The requirement for 100 percent coverage for one- or two-second notification if a signal fails.

We have Stanford University and some of the best minds in the country working that. Mr. Broderick is much more optimistic about that than I am. I am probably the agency conservative on that score. Tony, you want to—

Mr. CARR. I think a diversity of opinion is healthy, I really do. Mr. Broderick?

Mr. BRODERICK. Well, I agree with Marty, we have—maybe it is just gut feel optimism, but if you accept the fact that a somewhat more complex system for Cat II or III use, that is with a local differential receiver and transmitter would be used, the accuracy requirements are there and I think we have got to look hard at the availability and the integrity. But I think there is good reason to believe that in the latter part of the decade, you could use the system that way. Technologically it is not really an issue. They are really almost institutional kinds of things.

Mr. POZESKY. There is no doubt you will see in Aviation Week reported next year we have achieved Cat II and III capabilities with GPS. However, doing it 24 hours a day, 7 days a week, 100 percent of the time on a worldwide basis is a different set of issues.

So those are the kinds of issues that bother me, not the ability on a perfect day with everything tuned up 100 percent to do it. I think you can do it that way, but in the more routine basis, it is a little harder.

FACTORS AFFECTING A DECISION ON MLS

Mr. CARR. The second piece of information that I would like and that is on the MLS time frames. What is pushing a 1995 decision on this? What about a 1996 decision? Does a longer schedule enhance your confidence and ability to work some of these problems out?

Mr. POZESKY. I guess the 1995 decision started out by backing up from the 1998 ICAO date which is currently the date of record, unless it is changed, as to when the world has agreed to begin to implement MLS at international runway ends.

In order to look at lead times necessary to get runway ends equipped for international use, you would really begin by 1998 and have the runway ends equipped by 2000, which I think are the exact ICAO criteria. You want to make that decision in 1995 so you can begin to buy that equipment in 1996 so that you can have the necessary runway ends equipped by 1998, 1999, 2000, which is the ICAO driver. So that is where the dates come from.

Mr. CARR. I think that is an important piece of testimony. I am not sure I like it. Again, it seems to me that what you do with GPS is again driven by MLS. It would seem to me in a perfect world we wouldn't have one technology setting the time frames for another.

Mr. POZESKY. I understand. It may be that in 1995, you know, one of the options might be for ICAO to delay that date. We just don't know at this point in time.

Mr. CARR. Maybe some of us on Capitol Hill ought to communicate with ICAO as well and let them know that notwithstanding the best efforts of our administration, some of us may not want to supply money for that 1998 date, unless we can move in a more technology-neutral way.

Mr. POZESKY. Let me just take that a little different way. I would welcome the opportunity to keep the committee tied in closely on this subject as it evolves with GPS and ILS.

I think it has got lots of facets. We talked about the military facet. We talked about the technology facet and the international—the U.S. leadership issue. I would welcome the opportunity to keep the committee posted on this on a regular basis as we move along.

Mr. CARR. I welcome that expression, because I think this is big ticket money, and I want to let everybody know that we want to work with everyone, including our friends and neighbors in the international community, but it can be very hard to get the support of this Committee to spend lots of money that is driven by an international decision that we don't have some participation in.

I think it is going to be very hard for this or a future administration to come here and say, "We agreed to this in Montreal way back; therefore you have to spend this money now." I don't think that is the way this committee looks at its function.

Mr. DEL BALZO. Mr. Chairman, I don't think we say that. I think we are consistent with where you are. We will not commit to production money on MLS until we have answered the GPS Category II, Category III question.

Mr. CARR. Even if that slips to 1996?

Mr. DEL BALZO. Yes, sir.

Mr. CARR. I welcome that testimony.

Mr. DEL BALZO. We believe we can answer that question by 1995, and if we can answer that question by 1995, we believe we will be consistent with the 1998 international date.

If we cannot answer that question in 1995, I believe that it is just prudent to delay still that MLS production decision until we have that answer. And if that means that we are not consistent with an international date, well, so be it, we are committed to not making a production decision until the basic question gets answered.

MLS: RISK ASSESSMENT

Mr. CARR. I like that answer. My worry about that is that we hope within the year we will have an FAA administrator appointed who is going to probably have ties to the White House and the State Department. If what you are announcing today can hold on a subsequently appointed administrator, then I think this committee would be delighted.

Just on a technical basis, not a political basis but a technical basis, what is the percentage of confidence that we ought to have?

We talked about risk assessment a lot yesterday, weather forecasting and its relationship to all of these things. What is the percent of confidence, what is the risk assessment that 1995 will hold as a decision date?

Mr. DEL BALZO. To answer the question?

Mr. CARR. Yes. Let's go to the conservative end. [Pointing to Mr. Pozesky.]

Mr. POZESKY. You are talking to the FAA conservative on this issue.

Mr. CARR. We are going to get your percentage, then we are going to get Tony's.

Mr. POZESKY. Probably 80 percent that you would know the answer. The problem is that it is very hard to prove the negative. Anybody will tell you that it is very hard. If we are not able to do it, then we are going to be in a situation of trying to prove the negative which says this idea won't work and that idea won't work.

Mr. CARR. I don't think you are asked to prove the negative. Again, we go back to risk assessment.

Mr. POZESKY. I will sign up for 80 percent.

Mr. CARR. You are 80 percent confident.

Mr. POZESKY. That we will know enough to make a good decision by that time.

Mr. CARR. All right. Mr. Broderick?

Mr. BRODERICK. I will buy 80 percent. That is great.

Mr. CARR. This isn't a negotiation. You can do that back in your office.

Mr. DEL BALZO. Do I get a vote? One hundred percent.

We are into accountability these days. I believe we have a program that is going to get us all of the information we need to make that decision.

Mr. CARR. I believe in accountability, but I also believe in believability, and I have to say that when somebody tells me there is going to be 100 percent of anything, I have a little hard time with it. I know that is your intent, but—

Mr. BURT. Let me reemphasize something Mr. Pozesky said in his last comment, and that is that if the decision is clearly that we can achieve Category II and III capability, then it will be easy to move forward. If the data that we have available to us looks complete and indicates that we cannot, then we are still in an issue of how long do we keep spinning this thing before we decide to give up on it.

So if, as we hope, the indicator by 1995 is that we can go forward, then I think it will be a straightforward decision, we will move that way, and we probably will be able to be convincing in the world councils where we have to go to work with our international partners.

Our airlines are also players in this because if the rest of the world community equips their runways, then our international airlines will have to equip their aircraft, and that will begin to squeeze on us also.

LANDING SYSTEM REQUIREMENTS

Mr. CARR. I would like to ask Mr. Belger the question of acquisition here. We were talking before about requirements. To some extent it seems to me that requirements and the definition of requirements is going to play into the decision in 1995 or the confidence we would have that we would make a decision in 1995. If you specified a requirement that the system had to only be available 50 percent of the time, then you probably would be able to make a decision today. So some of this is determined by what the requirement is.

So can you address that a minute? Has the requirement been set? Is it fixed in concrete?

Mr. BELGER. I think it would be not right to say that it is fixed in concrete. That is one of the values of approaching it, at least the MLS development, in the way we have, in that we are not locked into a production level requirement decision yet. We will make that decision after we get through the developmental stage.

We have parameters and requirements for the developmental stage, but we are not locked into production level requirements yet.

GPS REQUIREMENTS

Mr. CARR. But I am talking about GPS now, what are the requirements on a GPS level system—those haven't been fixed yet either.

Mr. BELGER. I think the same type of process. I don't think we are locked into parameters or production level decisions yet. I think you need to learn a little bit more about what the capabilities are, first of all, before you lock yourself into a production level decision. That is one of those questions where you have to find the right balance, too.

We have been criticized a lot in the past for developing requirements that were just in many folks' minds too specific, too narrow. And there are pros and cons there. On the one hand, you can say seven nine's requirement for liability is too much, you waste too much money trying to reach that level.

On the other hand, it is quite clear to me in just the one year that I have really looked into this that by establishing that type of requirement you really do push technology, you really do push folks to develop the most reliable system. So our tough job is to find the right balance.

USE OF BRITISH MLS

Mr. CARR. Coming at it from a slightly different angle, Mr. Del Balzo, you portray MLS development as a bit of a hedge, something that you have ready to go if GPS doesn't measure up, and we have to fulfill our international agreements we have to deploy all kinds of MLSs.

Why not just use the British system? Apparently they are going to be putting their Cat III MLS system out, delivering their system in a time frame where ours are still in prototype.

Why do we have to spend the money? Maybe we can just buy production off the British system, if we need it, as a hedge.

Mr. DEL BALZO. We could do that. I think it is a question of U.S. leadership. The U.K. industry has a contract to produce, and they will develop and be in a position to capture a worldwide market should there be one.

I believe without the contract that we currently have with two U.S. manufacturers, we would lose a significant opportunity to compete in a worldwide marketplace.

Mr. CARR. But we could use the British system here?

Mr. DEL BALZO. We could use the British system. We could probably use a system that is being developed in Canada. The Canadians have made a decision to procure and implement microwave landing systems. We could do that as well.

TRUST FUND FINANCING FOR GPS

Mr. CARR. Marty, back over to you, I am looking for your crystal ball again. Do you see GPS funding either for operations or eventually for launches coming out of the Aviation Trust Fund?

Mr. POZESKY. I see part of it coming out of the transportation community somehow.

I mean, I am not sure it is the Aviation Trust Fund, because I think aviation is going to be a relatively small user of GPS. But, I mean, I can see that this needs to be a national system. It needs to be sustained beyond the point when military no longer has a military need for it. And it needs to be augmented.

So the days when you could have a new generation—I am talking about 15 years from now—the days when you can have a new generation of satellites optimized for application is clearly on the horizon.

I think one of the issues that is going to get into this is whether or not or how we are going to accommodate private interests. I don't want to complicate my answer by that issue, but there probably are private companies out there who would be interested in putting private capital into a system of this scope.

But I guess I see the civil community either through a tax or through a trust fund or some user fees paying a portion of the system. I think it is essential that we figure out some way over the

next couple of years to sustain this system when the time comes that there is no longer a military purpose or need for it.

Mr. DEL BALZO. The question of cost allocation, cost allocation analysis has to be done comprehensively. The estimates we get now are that it will run on order of \$400 to \$500 million a year to continue to operate and maintain, including the replacement of additional satellites as they are required.

In return for that \$400 to \$500 million—and I am not suggesting that aviation pays all or even a significant part of that—the benefits to aviation turn out to be the number of ground facilities that we can turn off and no longer have a need to invest in. The whole network of ground navigation facilities, VORs, Category I ILSs, primary radars, there is a significant payback to the aviation part of transportation.

FUTURE USE AND PROCUREMENT OF TACANS

Mr. CARR. I have a couple of more questions that I will ask for the record, but I would like to end with this one before yielding to my good friend from Virginia. This is more in the route area than it is in the precision approach area.

But given the hope for GPS, does this mean we can also slide or even hope to get rid of our TACAN procurements?

Mr. Burt?

Mr. BURT. Yes, Mr. Chairman. In fact, the FAA has already formally notified the DOD that we intend to cease supporting the TACAN system after the year 2000.

Mr. CARR. Any hope you could do it earlier?

Mr. BURT. That is the transition date that the military has for having all of their aircraft equipped with GPS systems on the Navy side, which is the primary user of TACAN systems, I believe, and until their aircraft are able to navigate the system, I don't know how we can end it earlier than that, sir.

Mr. CARR. Maybe it is something we can work on with our colleagues on this end.

Mr. BURT. In answer to the second-level question there, we do not plan to order any additional new equipment to put into the TACAN system beyond the current buy of antennas that we have. We will keep the current system going until it is not maintainable or until 2000, and then we will start shutting them off.

Mr. CARR. What is the current TACAN buy?

Mr. BURT. Two hundred and three?

Mr. TURNER. Two hundred.

Mr. BURT. Two hundred and a couple of TACAN antennas.

Mr. CARR. Has it been considered to cancel that contract?

Mr. BURT. No, sir.

Mr. CARR. Should it be considered?

Mr. BURT. I don't believe so. There are multiple things in that contract for us. In those 200 sites, those will be going into VORTAC sites where we currently have low-power consumption VOR units and very high-power consumption TACAN units which require us to maintain power units at those sites that are expensive and environmentally unattractive to us as rapidly as we can swap out those antennas.

With the low-power antenna, we will be able to get rid of the backup power systems there that cause us that workload on the airway facilities folks and the environmental concern. So from an FAA point of view only, those 200 and some systems have been shown to have a very positive cost-benefit ratio.

Mr. CARR. But the life-cycle cost is enormous? Because the life is so low?

Mr. BURT. The benefits will only accrue over a period of about five years, but even at that, the antennas will pay for themselves.

Mr. CARR. I would like to see that analysis.

Mr. BURT. Yes, sir.

[The information follows:]

Full TACAN services are required to support DOD operations through the year 2000 with a gradual phase down through 2010. However, the figures outlined in the attached cost-benefits summary are based on operation to the year 2000. Continued operation will accrue greater benefits.

This study is an update based on the May 1991 "Cost-Benefit Analysis of the Low Power TACAN Antenna (CIP Project 44-12)". The program is comprised of the development and replacement of 195 TACAN operational antenna systems. The project has an operational life of 20 years, although costs and benefits have been evaluated over a eight year period (e.g. 1993-2000).

The study finds that benefits to the FAA total an estimated \$62.6 million in constant 1993 dollars over the 1993-2000 period compared to a total investment cost of \$21.3 million. In present value (PV) terms, benefits total \$54.2 million, and the total costs to the FAA are \$20.3. The analysis shows that the project has a net present value (NPV) of \$33.9 million, and a benefit/cost (B/C) ratio of 2.7. The payback period for this project is estimated to be 2.2 years. The study indicates that the benefits of this project outweigh its costs.

Benefits were assessed based on the probable reduction in power consumption, maintenance requirements, and the elimination of the F&E costs associated with the fuel tank replacement and cleanup programs at the TACAN sites. The benefits were calculated for the O&M savings and F&E avoided costs over the 1991-2000 time period.

Costs were estimated for hardware acquisitions based on project office inputs, contract data, and engineering judgement. The O&M (operations and maintenance) costs were based on project office inputs, AF staffing standards, and engineering judgement.

COST-BENEFIT ANALYSIS SUMMARY

[Dollars in millions, 1993]

Year	Constant dollars				Present value			
	F&E cost avoidance ¹	O&M savings ²	Ben.	Invest. costs	F&E cost avoidance ¹	O&M savings	Ben.	Invest. costs
1993.....	\$2.1	\$1.3	\$3.3	\$4.1	\$2.1	\$1.3	\$3.3	\$4.1
1994.....	\$6.4	\$5.0	\$11.4	\$10.6	\$6.1	\$4.8	\$11.0	\$10.1
1995.....	\$4.2	\$7.4	\$11.6	\$6.6	\$3.9	\$6.8	\$10.7	\$6.1
1996.....	\$0.0	\$7.2	\$7.2	\$0.0	\$0.0	\$6.4	\$6.4	\$0.0
1997.....	\$0.0	\$7.2	\$7.2	\$0.0	\$0.0	\$6.1	\$6.1	\$0.0
1998.....	\$0.0	\$7.2	\$7.2	\$0.0	\$0.0	\$5.8	\$5.8	\$0.0
1999.....	\$0.0	\$7.2	\$7.2	\$0.0	\$0.0	\$5.6	\$5.6	\$0.0
2000.....	\$0.0	\$7.2	\$7.2	\$0.0	\$0.0	\$5.3	\$5.3	\$0.0
Total.....	\$12.7	\$49.9	\$62.6	\$21.3	\$12.1	\$42.1	\$54.2	\$20.3

¹ F&E savings from reduced requirement for additional fuel tank procurements and environmental cleanup for CIP projects 46-23 and 46-22.

² The O&M savings is due to a decrease in power requirements and maintenance of the existing mechanical rotating antenna.

Net Present Value (NPV): \$33.9.

Benefit-Cost (B/C) Ratio: 2.7.

Mr. CARR. Mr. Wolf.

FOREIGN COUNTRIES INVOLVED IN GPS/MLS

Mr. WOLF. Thank you, Mr. Chairman.

On the GPS and MLS, what companies are involved that are foreign companies?

Mr. TURNER. For the two MLS contractors, Raytheon and Wilcox. Raytheon is not. Wilcox is a subsidiary of a French company.

Mr. WOLF. French company?

Mr. TURNER. That is correct.

Mr. WOLF. What French company is it?

Mr. TURNER. Thompson.

Mr. WOLF. What is Thompson involved in?

Mr. TURNER. Air traffic control systems around the world.

Mr. WOLF. What is the research funding Congress has put into this over the years that has gone to Wilcox?

Mr. TURNER. I know of very little research money that has gone on. They competitively won bids for this.

Mr. WOLF. What percentage of the competitive bids have they won?

Mr. TURNER. In the instrument landing system, let's see. If you just look at MLS, between them and Raytheon, and there were three or four companies bidding on that at the time, the vast majority of the parts are built in Kansas City.

I was out at the plant just three or four weeks ago. It is a good production line. They have invested significant capital to make them a good supplier. I do know that Thompson has shifted some of their world market of navigation landing-type devices to Kansas City. If you want to look at it, there is a win-win situation there, not just totally negative.

U.S. TECHNOLOGIES TARGETED BY THE FRENCH

Mr. WOLF. In today's paper it covers an issue, it says "CIA, French target secrets of U.S. firms." It says, "Central Intelligence Agency recently warned dozens of U.S. defense and aerospace companies that French intelligence agents are targeting them for their industrial secrets, and the warnings help persuade Hughes Aircraft Company not to exhibit its equipment at the Paris Air Show in June."

Did you know that, Mr. Del Balzo? Is that something FAA has been involved with?

Mr. DEL BALZO. No, sir.

Mr. WOLF. It says the CIA's information appears to be based in part on a French document that outlines the type of 21st century aerospace and defense technologies in which French companies are interested. Japan has also tried to get U.S. companies' secrets for its companies, U.S. Government officials have said.

Don't you think it would be a good idea for the FAA to have a briefing by the CIA? If they have given briefings to private companies, don't you think it would be worthwhile for you to get a briefing?

Mr. DEL BALZO. Yes, sir, I do, and we will do that.

Mr. WOLF. Would you get a briefing and then come by my office and tell me what you have learned with regard to that?

Mr. DEL BALZO. Yes, sir.

FOREIGN COMPANIES BIDDING ON U.S. CONTRACTS

Mr. WOLF. I am going to cover another issue upon which nobody from the FAA got back to me. On this issue, I feel very, very strongly. The fact is, I am probably going to offer language to the appropriations bill with regard to this.

If you could also furnish me and the committee a list of companies, foreign companies that are now taking advantage of, whether it be bidding on contracts that they have been the successful bidder of, or research and development, or any that the FAA is involved with?

Mr. DEL BALZO. Yes, sir.

Mr. WOLF. Could you do that by next Monday?

Mr. DEL BALZO. Yes, we can.

Mr. WOLF. Can you get the briefing from the FAA, from the CIA?

Mr. DEL BALZO. We will do that as quickly as we can, and if we can possibly get back to you by Monday, we will, and if not, I will call you myself.

Mr. WOLF. I want to know if I offer an amendment, precisely what areas we should go into. I think we can cover that in a meeting where I can talk to you, without taking any more time.

[The information follows:]

In addition to FAA's contracts with foreign corporations either as a prime or subcontractor, several of our major contractors are a wholly-owned subsidiary of a foreign company. Below is sample of those contractors currently performing work for the FAA:

FOREIGN

Research & Development: (Prime Contractor) Contract No. DTFA03-90-C-00053, CPAD Holdings Ltd. (Canada), Vapor Detection.

Systems Integration: (Prime Contractor) Contract No. DTFA01-93-C-00015, E-Systems (United States), Aircraft Flight Inspection System.

Subcontractors: a. Canadair Air, Parent Company: Bombardier, Inc. (Canada), Supplier of Long Range Aircraft; b. Aerospatiale (France), Aeritalia (Italy), (ATR Consortium).

DOMESTIC SUBSIDIARY TO FOREIGN COMPANY

Engineering Production: (Prime Contractor) Contract No. DTFA01-91-C-00035, Wilcox Electric Company, Parent Company: Thompson Corporation of America (France), Instrument Landing System.

Systems Integration: (Subcontractor to E-Systems for Aircraft Flight Inspection System) Contract No. DTFA01-93-C-00015, Learjet, Inc., Parent Company: Bombardier, Inc. (Canada), Supplier of Medium Range Aircraft.

Systems Development: (Prime Contractor) Contract No. DTFA01-92-C-00037, Wilcox Electric Company, Parent Company: Thompson Corporation of America (France), Microwave Landing System.

(Subcontractor to IBM for Advanced Automation System) Contract No. DTFA01-88-C-00042, Sony of America (Japan), Screen for Air Traffic Controller Workstations.

In addition to the above contracts, we also have Memorandums of Understanding such as:

Israel—Nuclear resonance absorption.

United Kingdom—Bilateral agreement to periodically participate in testing of Aviation Security technology.

France—Bilateral Agreement to meet semi-annually to exchange Aviation Security Research and Development initiatives and status.

Netherlands—Agreement to participate in joint testing and sharing of test data of Explosive Detection System (EDS) technology.

FRENCH TARGETING U.S. TECHNOLOGY

Mr. WOLF. This is an important issue, yet when I raised it last week with the Federal Highway Administration, it was kind of a yawn.

The technology which we want to be in the front of in this country is important technology with regard to Detroit and the automotive manufacturers and many, many others. And I am very concerned that people at the Department of Transportation haven't quite caught the vision with regard to some of the potential.

The article goes on to say that the French DGSE intelligence, many times have a black bag operation against Americans in Paris. They will come into your room and Xerox and photograph your papers.

Also, and it has been now out in public so it is not a problem of talking about it, there have been indications that on first-class—I know none of you fly first-class—on first-class on Air France, some of the seats have been bugged with regard to gaining intelligence from American businessmen as they talk back and forth.

The Japanese have a segment of their intelligence parallel to the CIA that does nothing but target American technology. Other agencies, other companies do use their companies, go to their intelligence systems to find out different things. They will almost place an order with their intelligence agencies to say that "we are missing this one part and we need the part." They go to trade shows and they gather all the brochures. They do everything. And it just irritates me to think we are just allowing this information and technology to leave, and sometimes people are not very sensitive.

And I want to know that the FAA is aware that they are targeting aerospace and high technology, because that is what you do. So I cannot overstate my point that this is something that I care very deeply about, and as the Congress focuses on it, I believe the Congress will care deeply about it.

We all know what happened to MAGLEV, developed in the United States. Now it is outside. The VCR. You can go on and on. You can't buy an American-made television except for Zenith, which has a little parts operation in St. Louis but everything else has gone south of the border and gone outside of the country. We don't want that to happen with regard to this technology.

Are there any people who have worked for the FAA that are now working for Wilcox?

Mr. DEL BALZO. Not that I am aware of, no, sir.

Mr. WOLF. Can you check and let me know?

Mr. DEL BALZO. Yes, sir.

[The information follows:]

It is illegal to retain such files on former employees.

Mr. WOLF. Can you let me know of any senior FAA employees that have left the FAA that are now working for foreign companies that are out competing in this business?

Mr. DEL BALZO. We will do that.

Mr. WOLF. Thank you.

[The information follows:]

It is illegal to retain such files on former employees.

INCIDENTS WITH AUTO PILOT SYSTEMS

Mr. WOLF. Mr. Broderick, last night as I took my mail home to read some of it, I looked at The Wall Street Journal. You were here all day; did you have a chance to read that article?

Mr. BRODERICK. I did the same thing you did, sir.

Mr. WOLF. The article, for those who didn't read it, talks about the 747, when put on auto pilot, the potential danger with regard to gradually going off, and they cover that one aircraft that was leased by the Japanese. Will you talk to us a little bit about it and tell us whether the FAA feels it is something that you should be actively putting out a directive?

Mr. BRODERICK. Well, we do not feel that it is something that right now merits an airworthiness directive, and that is because in about 35 million flight hours of 650 747s, we have somewhere between five and seven instances in which we have had a roll excursion which exceeded something like 50 degrees.

That one particular story in The Wall Street Journal described the most dramatic excursion that occurred, and it is something that is difficult to understand. It is also difficult to understand why it would be allowed to go that far.

There must have been some distraction or something in the cockpit that caused the crew not to see that the aircraft was slowly departing from its intended course. We have worked with both Honeywell, the auto pilot manufacturer, and Boeing. The National Transportation Safety Board, Honeywell and Boeing have not been able to identify the cause of these accidents.

An auto pilot is not something that is designed to replace the pilot. It is an aid for the pilot. We are convinced in looking at what has happened and the data available so far, and this only occurred about two months ago, that the information that we have on how these auto pilots should be used and the normal instrument scan that the pilot should be following is sufficient to catch these and not present a safety hazard.

We are going to continue to work to see if we can identify the kind of problem that occurs. We will work with the Board to see if perhaps, with their recommendation, we develop some kind of additional warning system as appropriate.

The problem that you have with something like this is that when you have an occurrence that is seven times in 35 million, you would have a bigger problem with false alarms from the device that produces the warning than the device—than the warning itself. And we certainly don't want that to occur.

So it is something we are looking into. It is not something that is a safety hazard today. It is a very, very rare occurrence that happens, as I said, once in a while, that by normal procedures should be preventable.

FAA NOTICE ON AUTO PILOT SYSTEM INCIDENTS

Mr. WOLF. Would it not be worthwhile to put out some notice to the pilots, not a change and obviously not a new system, but just a notice, just a notification?

Mr. BRODERICK. We will be evaluating what to do with the NTSB in this case, and maybe that is something that would be appropriate.

Mr. WOLF. I would think it would be. I am not so sure you have to put a new system in to alter it. Autopilot is a help, it is not supposed to do the job, but somehow a notice whereby any pilot who is flying a 747 just has a notice that is just a reminder in the back of the mind.

I am sure most of them now know it based on the article that was in The Wall Street Journal yesterday, and it was a long detailed and frightening article. Fortunately, there was cargo on there, and not passengers.

How many incidents, did you say seven?

Mr. BRODERICK. That was the most severe that ever occurred. Seven that have occurred in the last 20-some-odd years of 747 flying, in which the roll angle exceeded 50 degrees.

Mr. WOLF. 747s are flying around the world, and all the pilots in Thailand and Singapore may not be reading The Wall Street Journal. And my own sense is somehow, from an international point of view, there ought to be some notification.

Mr. BRODERICK. We will take a look at doing that and working with the airlines. Perhaps using the distribution list we have for directives, there might be something we could do.

Mr. WOLF. Does that go to foreign pilots?

Mr. BRODERICK. Yes. We actually go to the airline and have them distribute the information further. It goes to all countries that have operators that have this, as well as the airlines.

Mr. WOLF. I think that would be worthwhile doing.

Mr. BRODERICK. We will look into that.

RULEMAKING FOR HIGH DENSITY CONTROLLED AIRPORTS

Mr. WOLF. Mr. Del Balzo, at the hearing last year, it was Mr. Quinn I talked to about the ongoing rulemaking concerning the FAA's attempt to look at available alternatives to increase new entrants at the high-density controlled airports.

I had worked with Secretary Lewis to apply a nighttime noise standard to deal with the density problems at National Airport and several other airports.

I had asked the FAA for a commitment that they would not recommend an increase in the 37-per-hour flight operation for air carriers at controlled airports. It was indicated they would publish a rule in the Federal Register in a few months, and that was a year ago. Since that time, nobody has contacted me with regard to the status of National Airport.

I saw an article in a paper several weeks ago where somebody was asking that this be changed. And it was a member from the other body who was also involved.

Can you give me an update on where that is with regard to the slot situation at National Airport and the other airports, and are you absolutely, firmly, positively, categorically committed to the 37, and is there any thought, hopefully not, of taking some of those commuter slots and transferring them to others?

Mr. DEL BALZO. Congressman, we are looking at the entire slot issue at all of the slot controlled airports. We have no intention of increasing the number of operations at Washington National above the 37. We are looking at our entire approach to the high-density rule. But we have no intention of raising the current cap at Washington National.

Mr. WOLF. What about the commuter slots?

Mr. DEL BALZO. We are reviewing that now. We know we have made some adjustments at several airports. We are still reviewing what it is that we would do at Washington National.

Mr. WOLF. What are you looking at?

Mr. DEL BALZO. Whether or not and to what degree we would allow the substitution—

Mr. WOLF. Why would we allow any substitution? That was an agreement that the Secretary made, and that was an agreement that the FAA at that time supported. That was the agreement that I frankly supported, pushing that legislation and working that out. Why would we need to go back and look at it again?

Mr. DEL BALZO. We would not go back and look at it again on our own volition. We have an obligation to consider any request that we get from the industry for any modification. We get requests every day, sometimes from United Airlines at Chicago, or American Airlines at Chicago.

I don't know who it is that have submitted requests at Washington National, but we have an obligation through a public process to consider the kinds of requests that we get for exemptions or waivers. As of today, we have no intention to do anything with the number of 37, but we are obligated to respond to any request that we get from the community.

Mr. WOLF. But the number 37 is only half of it.

Mr. DEL BALZO. I understand.

Mr. WOLF. Because the commuter slots are equally important. So if you were to replace one for the other, you could argue that you haven't increased the number but you have changed a lot.

Mr. DEL BALZO. I understand.

Mr. WOLF. I hope will you just keep me informed literally on an hourly basis, because I will consider, if the FAA changes that, as breaking of faith. This was a hard-fought, carefully crafted compromise that everyone agreed upon. Most of the people in that region are no longer in my congressional district. It is Arlington and Alexandria. But I feel a commitment to it, and having taken leadership on the transfer of those airports, I think we now have an obligation to be firm.

So if there is any pressure brought upon you, I would like to know. Also, what troubles me, last year FAA said they were moving with regard to having something in the Federal Register and they would be in touch with my office. Whatever happened to that?

Mr. DEL BALZO. I don't know.

FINAL RULE ON HIGH DENSITY CONTROLLED AIRPORTS

Mr. WOLF. Who took Mr. Quinn's spot?

Mr. CASSADY. Mr. Chairman, I am John Cassady, acting chief counsel. I believe the rulemaking you are speaking to was a final rule that was actually issued and published last August that expanded the opportunities for new entrants and limited incumbents at airports to obtain slots at slot-controlled airports. Action by Congress postponed the effectiveness of that rule until this past January, but it is now in effect.

I am sorry if we didn't get back to you with notice on that rulemaking, and we will go back and get you copies of it and all of the issuance that is pertained to it.

Mr. WOLF. And who has made the request to look at the change in commuter slots?

Mr. CASSADY. There are two rulemaking vehicles affecting that. One is our own proposal to allow greater use of commuter slots for larger aircraft only at Chicago O'Hare Airport. Business Express has petitioned to extend the same kind of opportunities to LaGuardia and National Airports.

Mr. WOLF. Who is Business Express?

Mr. CASSADY. The commuter airline associated with Delta airlines. That petition was published, a comment period on it has closed and it is under evaluation.

Mr. WOLF. What have they actually asked you for?

Mr. CASSADY. I don't know the specifics of the numbers that they have asked for. They have asked for a liberalization of the use of commuter slots at both those airports for larger aircraft.

Mr. WOLF. Well, maybe you ought to come by my office and talk to me. I think that would be absolutely wrong. If the FAA does it, there may be support in the Congress for it, I don't know, I will doggedly stay after you on this issue.

This is a firm commitment. It was hard enough to put that transfer agreement together. Now that it is together and it is working and it is relatively quiet with regard to that, we are moving to quieter aircraft and things are changing, to do that would be absolutely wrong. I mean, it was very hard to put together the group of people that were willing to support that. And to come back in now would absolutely be wrong.

Mr. CASSADY. Let me emphasize what Mr. Del Balzo said. This is on the table because it has been requested and we are obligated by law to publish it and solicit public comment. We have not looked at it even from a minimal legal level yet. It may be that under the cap applicable at National Airport that you can't expand air carrier slots in that fashion. So we are not at a point to decide if changes are required at all. We will be happy to discuss this matter further with you.

Mr. WOLF. If you would, I would appreciate it.

It is my sense that the airport authority are opposed to that request. Is that accurate?

Mr. CASSADY. I don't know, sir.

Mr. WOLF. If you could do that, come on by, I would appreciate it. Maybe at the same time you come by, after you have the CIA briefing.

Mr. DEL BALZO. Good.

Mr. WOLF. Thank you.

Thanks, Mr. Chairman.

STUDY ON FUTURE RADAR TECHNOLOGY REQUIREMENTS

Mr. CARR. Mr. Del Balzo, in an October 23, 1992, edition of Aviation Daily, there was a reference to an interesting FAA study which, so far as I know, hasn't been released. The study apparently says that new technologies such as GPS, Mode S, and automatic dependent surveillance will eliminate the need for primary radars by the year 2000 and would reduce the need for about 35 of the FAA's flight inspection aircraft. If accurate, obviously that would have a tremendous impact on the budget work of this Committee.

What study is the Aviation Daily referring to? Would you comment on its findings?

Mr. DEL BALZO. I am not sure of the study they are referring to. We have had a study under way in the FAA for five years. We recently reached the conclusion that said we can do away with en route primary radar and begin phasing out en route primary radar beginning in about the year 2000.

Given that, we have taken a hard look at what our requirements are between now and the year 2000 in terms of the need to upgrade the radars that are in our current inventory. John Burt's people are involved in that analysis. Building on that, Marty Pozesky's engineering people looked at the potential of GPS to allow us to phase out primary radar in its entirety. That may be the study that was referred to in the Daily, I don't know that, and I am not sure where Marty's people are on that issue.

Mr. POZESKY. Like Mr. Del Balzo, I am not specifically aware of that, but I have that study, and we have talked about the possibility of using what we call dependent surveillance. Are you familiar with that term, Mr. Chairman?

Mr. CARR. Right.

Mr. POZESKY. If we went to that role in both the terminal and en route area, once the aircraft are fully equipped, you could begin to phase down your reliance on primary radar. We will start with en route, as Mr. Del Balzo said, and our future vision is that the terminal area will consist of primarily beacon and automatic surveillance equipment, with the weather information obtained from weather radar or something like that.

So we don't see any near-term ability to phase out primary radars other than the one Mr. Del Balzo talked about by the year 2000. In the en route area we have an R&D program looking at a system which will primarily be beacon based with ADS. That is part of our budget request this year.

But I am not personally aware of any near-term decision to get rid of terminal primary radars. I think that was your reference in the question, if my memory serves me right.

Mr. CARR. I think the Aviation Daily wasn't accurate in characterizing it as a study, but it was talking about getting a plan to possibly get rid of all primary radars by the year 2000.

Mr. POZESKY. I don't know of anything for all primary radars.

REDUCTION OF FLIGHT INSPECTION AIRCRAFT

Mr. CARR. What about the reduction of flight inspection aircraft?

Mr. DEL BALZO. That was to be associated with the implementation of GPS in a way that would allow us to phase out a ground-

based NAVAIDS. That is a long, long time away, if that is the study they are referring to.

Mr. CARR. Well, I don't know. They are referring to—it wasn't a reference to just concepts or conceptual stuff. They said 35 FAA flight inspection aircraft.

Mr. DEL BALZO. I am not aware of that.

Mr. CARR. It suggested it was probably some kind of a document they were looking at.

Mr. DEL BALZO. I don't know.

AIR TRAFFIC CONTROL DELAYS

Mr. CARR. Moving over to air traffic control delays, we hear a great deal about the costs imposed on airlines and their passengers from air traffic control delays. It is not always mentioned that on average 65 percent of those delays are related to weather. In the first two months of this year, about 75 percent of the delays were weather related.

And it seems to us that we ought to be using some of our resources to vigorously attack the problem of weather delays on the one hand, and I would like you to talk about what programs the FAA has in that regard.

On the other hand, it would appear that we ought to be talking about delays. Again, from a public relations point of view, we ought to get some kind of terminology where we talk about delays from the standpoint of delays that we can do something about as opposed to the delays we can't do anything about, which leads to misinformation.

I would encourage your public relations people to sit down with your technical people and figure out how you describe a weather delay in clear, concise, convincing, compelling terms, and a technical delay of some kind, so that we can begin to measure these both from a Committee point of view and manage the public relations problem created by just lumping all air traffic delays together.

Could you talk first about what we could do, what the FAA could do, to reduce weather delays, and then talk a little bit about how we could differentiate a little better between the weather and the non-weather delay?

Mr. DEL BALZO. Delay statistics I think are very complicated. To describe delays in a way that people can understand, the way you are suggesting, I think is just as difficult as trying to do something with full performance level controllers. They are very complicated statistics.

I don't think anyone is satisfied with the way we measure delays. I think it continues to be a moving target on what the definition of a delay actually is. I think that is an area that we need to do a better job in, I agree with you.

I think there are a number of things that we are doing to reduce delays. If you compare the number of delays today to what it was in 1989, you will find a 25 percent reduction in delays. Some of it has to do with the level of traffic. I think a lot of that also has to do with what airlines have done to minimize the image of delays. If you look into the Airline Guide today you will find it takes longer to fly from LaGuardia Airport to Washington National today than

it did a couple of years ago. There are fewer delays, and the reason is the airlines have expanded the estimated flight time. So I don't even put much stock in the fact that delays are down compared to 1989. But nevertheless, delays are an issue.

You know the number of airports that are still experiencing significant delays and you know that we can argue about the number—50 or 60 percent of the delays are weather related.

So if you look into our weather-related programs, you will find a number of programs that will have an impact on delay reductions. Programs like NEXRAD, TDWR and the Central Weather Processor will all contribute to the reduction in weather-related delays.

The subject that Marty Pozesky has spent a lot of time thinking about is the weather program. Let me ask Marty to talk in a little more detail.

MR. POZESKY. Mr. Carr, as you well know, we are doing a number of things to get a better understanding of the weather system. The work will help us to do a better job of predicting it and to include it in our automation systems.

I take your point very well that there is such a thing as a weather-related delay, a preventable delay as opposed to a nonpreventable delay. It is quite reasonable that we ought not to be taking credit for nonpreventable delays. I mean, if there is a thunderstorm over an airport, probably all the weather measuring gadgetry in the world isn't going to do much about that. The point about trying to separate those is a very valid point.

We are trying in our development programs to focus on the term we use, "preventable delays." Achievable improvements include being able to forecast upper winds, which we are now operationally using in the oceanic environment, and being able to forecast that is important.

So we are trying to draw a distinction between the preventable and what I think of as the unpreventable delays. We have got lots of programs that are focused on getting us better weather information to enable better planning, better forecasting and better tactical operation.

RELATIONSHIP WITH THE NATIONAL WEATHER SERVICE

MR. CARR. Are you satisfied with your interface with the weather service? It is a thing that nags at this Member of the Committee, who is also a vice chair of the Committee that funds NOAA.

MR. POZESKY. Let me try to answer that, because there is a reality that is clear in the National Weather Service. They are not going to do, because their budget will not permit them to do that, the kind of aviation-related weather research and development and implementation that we think is necessary for aviation today. As you well know, they have a modernization program. I know you are well aware of it, I am aware of the role you play on their oversight and appropriations committees.

They haven't made our modernization program. They are shrinking in terms of organization. They are going to a much more directed general forecasting kind of capability. Their ability to do what they perceive as unique user demand support, and aviation falls into that category, is likely to shrink, and is shrinking.

We are working with them and they are very, very cooperative. When you ask, are we satisfied with that interface, it would be nice if they were able to do more. They are not able to do more.

We see the need to do more, so we are having to pick up that slack. In fact, in my opinion we are probably way ahead of them these days in terms of what I would characterize as aviation-related weather and aviation-related weather development.

Mr. CARR. As we are talking, everyone is talking about reinventing government and reorganization, and we have committees in Congress and Capitol Hill looking at reorganization and a few other things. It would just seem to me that it would make a lot of sense for the Department of Transportation to maintain its own weather operation, if only, as you indicate, to put those enhancements to weather that NOAA and the Department of Commerce don't choose to.

And it seems to me that maybe the Agriculture Department and the Agriculture Subcommittee ought to be similarly interested. There are enhancements to weather that are particularly useful to agriculture that may be unimportant to aviation or transportation users. But then the important thing is that the department then controls its destiny in these regards.

Under the old and current scheme, NOAA taps the Aviation Trust Fund to the tune of about \$35 million a year, which is supposed to be their payment for the enhancements that they want to offer.

And I think as representatives of the government aviation community, it is fair to say, are you satisfied with what you are getting for the \$35 million that we are spending every year out of transportation funds for weather? And apparently the testimony is, diplomatically, you are not.

Mr. DEL BALZO. We are asking ourselves those questions now. Weather is a large issue with us. Technology has advanced very rapidly in the last couple of years. If you look at all of the weather products that we are developing and have developed, that we now have the ability to have a weather channel on, we have the TDW-1. We have sophisticated cockpit sensors now, weather processors that we are developing, weather graphics capability.

We need to have a better understanding of how all of these systems get integrated into the weather products that will serve us best in the relationship that we have with the weather service.

We are leading up to a major government, FAA, and weather service/industry/user weather conference to try to sort out all of the things we have talked about in an integrated way. We are looking at having that conference in the early fall in the Washington area.

NOAA'S PLACEMENT IN THE GOVERNMENT

Mr. CARR. Do you know of any discussion going on in the administration about reorganizing the position of NOAA in government?

It would seem to me that NOAA would fit logically inside of DOT, particularly if you talk about the charting. All the charting they do is for transportation, so far as I know. I don't know of any charting that NOAA does that is for a non-transportation function.

And I am not suggesting it be put inside FAA. I don't think that would be a good idea either. But perhaps NOAA inside DOT would be a better place for NOAA.

Mr. DEL BALZO. I am not aware of any discussions.

Mr. POZESKY. I am not either, not inside the Administration. But as I have tried to say, we have promised ourselves that we are very much in the aviation weather business, and we have targeted on our radar scope to get a better understanding of this relationship. They are clearly withdrawing.

My comment to you was not focused on how much money, whether we are getting \$35 million worth, but are they providing the range of services that aviation needs, and increasingly they are not. They are not shy about that fact. Dr. Fry says very clearly that he is not able to do that, and has no intention of doing that, given his budget.

So we are very much engaged in this issue of what is FAA's role. FAA has to take a bigger role, at least in aviation weather. We have talked about this problem, not at the kind of global level you are talking about, not in terms of transportation; it has been more FAA than the National Weather Service.

Mr. CARR. Would it be a good idea then to propose to the Secretary that somewhere inside of DOT there be established a Bureau of Transportation Weather, which essentially tries to fill the gaps and takes over and maybe someday grows into a real weather service?

Mr. POZESKY. It may very well make sense. Again, I have not thought about it in that sense. There is no question in my mind the transportation community is using more of that. It may well make sense. I have not been involved in any of those conversations.

STATISTICS ON AIRLINE PERFORMANCE

Mr. CARR. I had another idea I wanted to pass by you. We are getting into a mode or we are measuring lots of things and disclosing lots of things. It has become possible for the average passenger, airline passenger, to find out what the on-time performance of that airline is and you can get all kinds of other statistics.

And back on this delay issue again, could we develop data whereby the average consumer would be able to find out which major pacing hub airports in the country experience, on average, the most delay?

Now, I am sure there would be some airports that would not like to see that figure, but my attitude is, who cares? It is the customer we serve, not the airports, and the customer needs to have information.

We already know, for example, or at least in the folklore of air travelers, that in winter months if you have to go through a hub, you avoid certain hubs because you think there might be a delay.

It might actually turn out that the delay statistics would be far better for those few hubs in a way that those who fly to schedule rather than to price, that they would maybe use those airports more than they do now because of the folklore.

Could we develop some statistics or a statistical base that would let travelers know, on average, which airports are experiencing

preventable delays, and what percentage of time and what are the nonpreventable delays? Could we do that?

Mr. DEL BALZO. Mr. Carr, I am sure we could and I am sure the data is probably already available. Let me just ask Dale McDaniel to confirm that. Dale.

Mr. MCDANIEL. Mr. Carr, up until your last statement, I would have said the data was available, the last statement being one of preventable delays. We do have pretty good delay statistics for airports using the series of databases which are available to us that we would be happy to share with you and walk through with you regarding the implications.

I would not go so far as to say that that allows us to make a determination of which of those delays are preventable. That has a lot to do with the nature of the operation of the system and what the characteristics of weather might be in an individual location, which is accountable for many of the delays in a lot of situations. That probably is not a preventable delay.

Mr. CARR. Well, I hope we could move to trying to define a preventable delay. Again, this gets back to our investment criteria. I would think that when we put out our investment criteria, one of the questions we would want to ask is "what is your airport's record with regard to weather delays and preventable delays", or preventable versus nonpreventable. Let's get some definition of that.

I think it would make a heavy impact on investment decisions. And you could then hope that you could show the taxpayer some performance-based investment decision-making as between two airports that are equally qualified, equally eligible, with one having preventable delays related to that particular investment goal and the other not having that. We would be in a better position to know how to wisely spend the taxpayers' money.

Mr. MCDANIEL. That is an objective that we would share. And, in fact, in the facility establishment criteria that we employ, we attempt to measure that. Mr. Del Balzo talked yesterday about the system-wide impacts which we have not yet used at estimating but we can on individual locations get a pretty good estimate of the increase in efficiency assuming all other conditions are equal at the airport.

Mr. CARR. Well, I would hope that we would do that and measure airports, because ultimately airports are in competition with other airports. I mean, we have these joint ventures between airlines and airports at certain geographic locations which compete with similar combinations, other places.

If competition is good, as I think it is, we ought to be giving consumers, the air traveling public, some information about what they are buying, particularly if we—and here I get on my soap box again—are going to be allowing airports to charge so-called passenger facility charges. The customer ought to be able to say, which airport, which hub do I want to go through. Which hub has an efficiency rating that is high; which hub has a delay rating which is low. That is the hub I am going to give my \$3 PFC to, or \$12 as the case may be. That is where I want to go. And I think we need to develop some data on airports so that airports have some performance targets and some competition themselves.

So maybe we could work together on it in helping you develop some of those databases that I think this Committee would be interested in funding. This Committee is interested, I would say, and I hope my friend from Northern Virginia would agree with me and I think he does. This Committee is interested in funding solid efforts by your agency to gain data that will lead to performance measures. If you want to make a sale before this Committee on spending the taxpayers' money, that is one to make. And I think this might be an area to do that in.

ASDE-3 RADARS

Mr CARR. Let's move to ASDE-3 radars. Now this program has a troubled history and the costs have grown from \$103 million to \$182 million. The first system was delivered five years late. The FAA has notified the Committee that it feels responsible for \$14 million of the contractor's proposed \$78 million cost overrun. This is a firm fixed price contract and I guess one of the first questions is, I thought firm and fixed meant that the government would not pay any overruns.

Mr. DEL BALZO. Can I first put it in a larger context and then we will address that issue? We had hoped to come before you today and declare victory on the ASDE-3 program. We had hoped that we could come before you today and tell you about how well the testing program was working in San Francisco with an ASDE and AMASs working together.

We had hoped we could come and tell you we had commissioned the first two ASDEs and they were operating well, one at Pittsburgh and one at Atlanta.

We can still tell you that the San Francisco work is looking promising and appears to be working well. We ran into a difficulty late yesterday at our facility that was commissioned in Atlanta. It had to do with an environmental problem, cadmium dust, which is located up in the antenna housing. That system has been turned over. We are not sure whether or not the same situation applies at Pittsburgh, so we are not home free yet on the ASDE program operationally. So the victory I thought we could declare today we cannot.

We do have a fixed price with Norton on the ASDE contract. We looked at some of the cost overruns and concluded that we were responsible for some of those costs. I will ask John to talk about that. Let me talk about the cost overrun first and then we will follow on. John.

Mr. TURNER. Whether I like to admit it or not, any time a program slips for five years and has continuing development requirement issues—there was, as a previous administrator said, some far-flung around that was done. I can step back and say it was before my watch. It was one of the reasons we went through a major reorganization three years ago to set up stronger program management offices and all the training that Monte referred to, et cetera.

We have looked at the claim and have met with your staff. We believe we validated that claim to the bare minimum that the government is responsible for. We did make some changes that required Norton to do some things not in the original spec. We step

up and say we have a \$14 million liability on that program. I can go into the details if you want.

Mr. CARR. Yes, go into the details. What problems did you make for the contractor that would cost you \$14 million?

Mr. TURNER. We had, in the way of spare parts requirements, in the way of reliability that we needed when we took a look at what our spec was calling for. We had, when we got down to discussing what they had proposed in our spec language and what we needed and those final arguments that the spec was not as specific as it should be. At this point, I cannot go into much more detail than that. I can come back with you.

Mr. CARR. Give us something for the record. We would like that.

Mr. TURNER. Okay. I would say that our lawyers went into this, our Defense Contracting Audit Agency reviewed it. It was not just a matter of simply rolling over and saying yes. It was very well audited.

[The information follows:]

The FAA awarded the ASDE-3 fixed-price contract on September 30, 1985. The contract combines development and production of 33 systems. The original schedule was delivery of the first system 24 months after contract award—September 1987. The contract is presently 5 years beyond that date and the first system, Pittsburgh, was accepted December 31, 1991. In February 1992, the contractor submitted a request for equitable adjustment (REA) claiming an incurred cost of \$77.9 million, attributing \$35.2 million to the FAA. They alleged the FAA directed ASDE-3 changes, acquiesced on system enhancements which will benefit the FAA through lower operating and life cycle costs, and developed a configuration with performance better than requirements. The remaining \$42.7 million is attributed to manufacturing processes.

The FAA contracting specialists conducted a thorough analysis of the REA proposals with the assistance of Defense Contract Management Area Operations, Baltimore, Defense Contract Audit Agency, FAA Chief Counsel, and independent consultants. This fact finding resulted in the \$14 million negotiated settlement. FAA Chief Counsel concurred that the negotiated settlement is equitable and should be awarded.

ASDE-3 RADARS: SYSTEM PROBLEM & CLAIM SETTLEMENT

Mr. CARR. I don't have the technical knowledge that you do on this particular program, but I am left with an impression that a bunch of the problems with this program have to do with the radar housing. Is that an erroneous impression on my part?

Mr. TURNER. Originally the unit sits on top of the tower or an individual tower on another place in the airport. The dome itself rotates so that it can spin the water off. An antenna is inside of a pear-body shaped housing away from the elements. You can heat the inside so that when you have freezing rain, and you need the antenna, it is capable of performing.

Originally the contractor had a problem with debonding on that internal antenna. That was through poor manufacturing quality on their part. They brought in experts and corrected that problem.

Over the last year we have had approximately a year delay to commission the first site. That has been the result of, as we got into operational test and evaluation (OT&E), the contractor had not designed the software to be robust in the environment we are using.

For instance, controllers could make keyboard entries that could lock up the system. The programmers who programmed it said, let's just go to a halt. It was incorrectly done.

The issues last year have been on the software and the reliability of the system. We had some power supply problems, line driver problems that Norton stepped up to and have replaced. All these came out through OT&E.

Over the last year, we have been in a posture of hunkering down, working through these issues at Pittsburgh, our first site, and Atlanta. The problem Mr. Del Balzo referred to is up in the antenna. The slip ring uses a cadmium silver teflon-coated brush that is creating some particles up in the antenna cavity.

The maintenance procedure is to yearly clean that out. There has been some concern by controllers, maintenance people that it is not a sealed cavity. There is a door that sits on top of the controller tower. Possibly there could be some cadmium dust.

The manufacturer, Norden, has run tests, concerned about their own health, and they say it is not a problem. We have asked our civil air medical people out of Oklahoma City to run tests. Those tests are due this week. The local safety inspector in Atlanta, in his or her judgement, felt that they should run some individual tests which they are doing this week. I would say at this last point, it is good to work through these issues.

Mr. DEL BALZO. Mr. Chairman, let me see if I can tie out the cost overrun issue. Last February Norden came to us with a \$78 million claim. Of the \$78 million, they clearly accepted blame for \$43 million associated with the manufacturing process and the things that John Turner just talked about. They claim that FAA was responsible for \$35 million due to changes that we had directed and that they had acquiesced to. Of the \$35 million, based on our review, we believe that we are accountable for \$14 million.

ASDE-3: COST BENEFIT ANALYSIS FOR POTENTIAL SITES

Mr. CARR. Well, again, I don't want to beat a dead horse, but last year, in an answer to Chairman Lehman, you stated that, as you said today, technical problems experienced with debonding of the antenna, had been corrected and validated through testing; the split target issue had been examined and would not impact on the operational use of the system. You said, "The interim technical solution to resolve the problem will be addressed with the implementation of AMASS. The contractor factory testing and operational testing and evaluation have been successfully completed. Final FAA shakedown testing will be completed by May of 1992.

This was information that was provided for the record last year. It was not a transcript of oral testimony. I would hope that in all matters where you are supplying additional information this year about the status of R&D, and all of these other things, that not only do you give us a date, but you give us a probability of that date holding so we begin to get some risk assessment from you folks.

Because the credibility of the agency, as you pointed out, is in bad shape and it is things like this that make it worse. You know, we all understand it is a complicated world out there and you don't

make your goals day in and day out. I don't make all my goals and targets, but we have to have some more information about the risk that that date will not be met. And then I think you are in a better position to defend what actually happens than you have been in the past.

The fiscal year 1993 budget added ten systems, and we were told that we needed to do that just to keep the line open. I understand you have not awarded the option for these systems yet; that you might not get around to it for a couple of months yet. What is going on with that?

Mr. DEL BALZO. I believe the number was actually 11 based on a cost benefit analysis that we had presented to this committee. The committee also added \$49.5 million to our appropriation.

Since that list was developed we reevaluated all of our cost benefit analyses. There are four systems that no longer qualify. So of the 11, there were four that would not meet what we would call our ASDE-3 investment criteria. We are prepared to move forward on the seven that do meet the criteria and we are prepared to talk in detail about the cost-benefit analysis results associated with those four that no longer meet the criteria.

Mr. CARR. You are quite right, there are a total of 11. You requested one, and the committee added 10 to make up the 11. Do you have a list of the four that do not qualify?

Mr. DEL BALZO. I do not. Oh yes I do: Albuquerque, Las Vegas, Phoenix and Albany.

Mr. CARR. And Albany?

Mr. DEL BALZO. Yes.

Mr. CARR. And the seven?

Mr. DEL BALZO. The seven would be Charlotte, Raleigh-Durham, San Diego, Cincinnati, Orlando, Santa Ana and the FAA Technical Center.

STATUS OF DETROIT ASDE-3

Mr. CARR. Was Detroit-Metro ever in the mix for an ASDE-3?

Mr. BURT. It is installed but not commissioned.

Mr. CARR. We had a major accident up there. You are probably aware that locals up there are quite excited about it. When will that be commissioned? That is on top of the new tower.

Mr. TURNER. That is right. I cannot tell you. We can provide that for you, sir.

Mr. DEL BALZO. I think that commissioning date now will also depend upon the results of what is going on in Atlanta.

Mr. CARR. On a complete aside, I want to commend you for the work that was done at Detroit, the commissioning of the new tower. It was a little longer than we wanted, but I think the FAA has done a very commendable job up there and I also want to commend specifically Dennis Ragle who runs the operation. He has done an outstanding job of keeping people in the community informed, including this Member of Congress.

Even when I didn't ask for it, he was doing a very good job of keeping the community informed about the progress of the tower and its commissioning. And from what I can observe, you have a

very outstanding employee in Mr. Ragle and all the people who support that operation up there.

Mr. DEL BALZO. That is a relationship that we try to develop throughout the country. I think what we managed to develop at Detroit is probably one of the better relationships that we have throughout the system.

[The information follows:]

The Detroit-Metro Airport ASDE-3 system was installed on the new air traffic control tower in March. The system will receive an updated version of application operating software as soon as current cadmium dust problems are solved.

ASDE-3: SOLE SOURCE PROCUREMENT

Mr. CARR. So back to ASDE-3. Do we have a date, approximate date, of when the seven will be awarded?

Mr. TURNER. Our schedule right now would be the July time frame.

Mr. CARR. July. Are you going to award this follow-on work on a sole-source basis?

Mr. TURNER. Sole-source basis. A letter of contract to Norden.

Mr. CARR. When will the production line break and what is the estimated nonrecurring cost to restart it again?

Mr. TURNER. The production line has broken, so there will be some cost to be negotiated on that. We have not sat down and done that yet.

Mr. CARR. Well, while I review a few more things here on ASDE, I will come back to it, does the gentleman from Texas have any questions?

COLLECTION OF PFC'S ON FREQUENT-FLYERS

Mr. COLEMAN. Thank you, Mr. Chairman.

I know that Mr. Chairman raised the issue of the PFCs yesterday, I believe it was, and I was getting some information about that from the record. I wanted to be certain that I was clear as to the FAA's position or rationale in interpreting the law so that it applied only to new PFCs approved after the date of enactment of, I guess last year's legislation, and not retroactive to PFCs that were already approved. I was interested in the rationale and where in fact we go from here.

What are your plans for the rest of this fiscal year, and then without enactment of a continued bar from collection, what would be the position of the FAA with respect to collecting PFCs?

Mr. DEL BALZO. Congressman, our interpretation of committee language and our interpretation of the intent of this committee was in fact that that limitation would not apply to PFCs that were awarded prior to the 1992 date. We mentioned that yesterday in our testimony.

I would ask John Cassady to talk a little about why we reached that interpretation.

Mr. CASSADY. Mr. Coleman, just a fairly straightforward interpretation of the words of the law and applying general principles of when you consume retroactivity on the part of congressional intent.

As a practical matter, as you know, we are under a limitation against enforcing collection of PFCs approved prior to that date on frequent-flyers as well. I understand that we have a prospective informal agreement to extend existing prohibition on approving PFCs which would be levied on frequent-flyers through fiscal year 1994.

Mr. COLEMAN. Let me say to you I disagree with that interpretation, and I can tell you that it is not a requirement. I think it is well-accepted in law, legislative law, that in fact when laws are passed that make a prohibition, it does not necessarily mean it cannot be applied retroactively.

It certainly could have been very clear that the FAA was not ever to collect from this point forward any PFCs. I guess that means that you think it is still okay, therefore, to collect old monies from PFCs. I don't.

I think we could get into an interesting discussion and get some scholars who teach those courses in law schools. I understand what you are saying and I understand now why you made that decision or that you made that decision.

Let me go back to the other part of the question about what are our plans following this September, assuming that no other legislation is enacted. Then would you be approving any applications from airports for PFCs?

Mr. CASSADY. My understanding is that we will not for the remainder of this fiscal year and that we would not in fiscal year 1994, either. We would not approve any PFCs that were intended to be levied on frequent-flyers.

Mr. COLEMAN. Mr. Chairman, if I might, I want to ask if I can place into the record a small article—won't take much space—from the Wall Street Journal with respect to the frequent-flyer issue.

Mr. CARR. Without objection.

[The article follows:]

FREQUENT FLIERS ESCAPE FEES ON SOME FREEBIES

Frequent fliers are getting a break, at least at some airports.

The Federal Aviation Administration decided in December that 22 airports can't collect airport-departure taxes from people travelling on frequent-flyer awards. But the FAA also decided that 48 other airports, including many of the nation's largest, can collect the \$3-a-passenger tax from such travelers, despite Congress's efforts to stop the practice.

There is no dispute that airports can tax paying airline passengers and use the revenue for airport improvements. But airlines say the taxes, also known as passenger facility charges, are unfair to people traveling on frequent-flyer awards. These people, the carriers say, expect their accumulated mileage to earn them totally free trips. Last fall, the airlines persuaded Congress to adopt a provision that effectively forbids the FAA to approve any airport tax-collection plans during fiscal 1993, which began Oct. 1. The law took effect Oct. 6.

The FAA interprets the law as barring airports from taxing frequent fliers' free trips if they submitted a tax proposal to the agency after Oct. 6. That means a skier traveling on a frequent-flyer award out of Telluride, Colo., or a family of four country-music fans flying free out of Nashville, Tenn., can't be docked \$3 and \$12, respectively, at least until the current fiscal year ends in September. (Congress could extend the law year to year.) The list of post-Oct. 6 airports also includes Manchester, NH, Midland, Texas, and White Plains, NY, as well as St. Thomas and St. Croix in the Virgin Islands and five Florida airports: Orlando, Pensacola, Tallahassee, Marathon and Key West.

The FAA legal opinion, however, spares airports with pre-Oct. 6 plans from losing tens of millions of dollars in tax revenue annually. These 48 airports include

Denver, Las Vegas, Philadelphia, St. Louis and New York City's three major airports.

About 6% of the nation's airline passengers travel on frequent-flyer awards, according to the FAA.

COLLECTION OF PFCs ON FREQUENT FLYERS

Mr. COLEMAN. Thank you, Mr. Chairman.

It says, we had decided, FAA had decided, that 48—22 airports cannot collect airport departing taxes, but had already decided 48 other airports, including the Nation's largest, can collect the \$3 per passenger tax from such travelers.

And I was curious, then, you are not going to change that, you say, even for the next fiscal year? We are going to leave it as is if nothing else legislatively happens in this arena; is that right?

Mr. CASSADY. That is correct, sir.

Mr. COLEMAN. You can see no circumstances under which that would change, the FAA would feel it necessary to make a change?

Mr. CASSADY. To change and go back and after this fiscal year and approve PFCs for frequent-flyers?

Mr. COLEMAN. For any airport prospective or those in the past?

Mr. CASSADY. I don't foresee that. I understand that the commitment was made by the General Counsel in the Office of the Secretary.

Mr. COLEMAN. And it depends on that pre-October 6 date, which was I guess the date of enactment of last year's bill?

Mr. CASSADY. I am only talking about new applications. I am only talking about prospectively. As far as—

Mr. COLEMAN. As far as the October 6 date?

Mr. CASSADY. From then and on into the future. As for applications which were approved prior to October 6, 1992, again, it is our view that that did not change.

Mr. COLEMAN. I wanted to point out that the Chairman's question, as I understood the way it was asked, basically highlighted the fact we are talking about an industry that seems to be having economic and financial trouble, and we in fact are not charging the passengers—we are in fact seeing to it that the airlines go through the process of determining those facility charges. I guess we ask their computers to do that so that we can get the payment.

All I am wondering is if we are not working against ourselves in a country where a lot of us feel we should be looking for ways—I think there is a blue ribbon commission doing that, looking for ways to see how we can keep the airline industry healthy or get them back to health. That is more of a realistic statement.

Mr. DEL BALZO. Congressman, I think we now find ourselves in a position of having two classes of airports—those that do, those that don't. We will go back and take another look at that and we will get back to you.

Mr. COLEMAN. It is not fair to those that don't, then. I guess everybody that is a member of the United States Congress knows the rule is, if there are funds being made available for certain kinds of projects in only one region or one district of the country, why not others? You mean, the Federal Government will help with water and sewage facility problems up around the Great Lakes but not

around the Rio Grande? Wait a minute. Those are the kinds of things that happen. It is human nature.

All I am saying is the exact same thing, the point you just made about having two classes of airports, is troublesome.

Mr. DEL BALZO. We will review it one more time, sir.

[The information follows:]

The Aviation Safety and Capacity Expansion Act of 1990 authorized the FAA to approve collection of passenger facility charges (PFC) from paying passengers. The FAA interpreted "paying passenger" to mean "revenue passenger," which included passengers flying on frequent flyer award certificates. Section 328 of Pub. L. No. 102-388, October 6, 1992, provided that no funds under that act were available for "planning or executing rules or regulations" to add PFC's to the cost of travel for travellers flying on frequent flyer award certificates. The Chief Counsel of the FAA interpreted the statute in an opinion issued on November 18, 1992. In that opinion, the Chief Counsel found that the statute prohibited the FAA, for the duration of FY 93, from (1) approving new PFC applications that provided for the collection of PFC's from frequent flyer award travellers and (2) taking any action to enforce the collection of such PFC's at airports for which PFC collections had been approved prior to 10/6/92. Accordingly, all PFC collection approvals issued by the FAA since October 6, 1992, have included an exception for frequent flyer award travellers; PFC collections approved prior to that date have no such restriction. While this results in differing restrictions for airports depending only the date of approval, the Office of the Chief Counsel continues to believe that this is the correct and necessary interpretation of Section 328.

MILITARY AIRPORTS PROGRAM

Mr. COLEMAN. Let me ask, if I might, one other question with respect to the issue of military airports program. I think it was enacted several years ago, 1990, I believe, to facilitate the conversion of airport fields and airports from military to civilian use or perhaps, I guess—I don't know if it would have permitted joint use of some types or some connecting part and I was wondering what kinds of funding you have requested for fiscal year 1994 for that part of the budget.

Mr. DEL BALZO. Monte.

Mr. BELGER. Mr. Coleman, there are two areas in the budget where we would request funds for former military airports or those airports that would be affected in the Department of Defense base closing. One is in the F&E appropriations with 7.6 million in the 1994 request. Most of that is for some lighting and automation equipment at Myrtle Beach, South Carolina. In addition to that 7.6 million, there would be funds in the AIP program for the military airports program. I believe that we have a limit now of 12 airports that can participate in that program. I think we have eight that we have made decisions on and we have to choose four more airports. I believe that is correct. So there would be AIP funds for those so-called military airport program airports.

Mr. COLEMAN. You said for base closure. That I understand was a Myrtle Beach issue, but is that a prohibition, then, for the utilization of those funds then? If it is not a base closure issue, you don't deal with it.

Mr. BELGER. The AIP part the military airports program is not necessarily tied to the base closure. So when we talk about—

Mr. COLEMAN. So when you say a limit of 12 today, that does not mean they would have to be base closures?

Mr. BELGER. No, sir.

Mr. COLEMAN. Are any of those base closures?

Mr. BELGER. Some might be. I have a list here.

Mr. COLEMAN. Can you provide that for the record.

Mr. BELGER. I will do it for the record, if that is okay.

Mr. COLEMAN. That is fine.

[The information follows:]

MILITARY AIRPORT PROGRAM

The Military Airport Program is a 2.25% set aside in the Airport Improvement Program designated for use at current or former military airfields.

This program is used to fund improvements or projects at those airports that cannot easily be funded through the regular Airport Improvement Program. Eligible projects include terminal buildings, gates, surface parking and fuel storage areas, types of facilities that are not airfield related but directly contribute to the viability of the airport.

This fund can be used to get former military airfields started or get those improvements in place that make the airfield attractive for airlines or other aviation tenants. Specific points of the program follow:

- o The Military Airport Program (MAP) is part of the Airport Improvement Program (AIP).
- o The program provides for placing special emphasis on the conversion of appropriate former military bases to civil use and on the identification and improvement of additional joint-use facilities.
- o As provided by legislation, initially eight and presently twelve current 1/ or former military airfields whose conversion in part or whole to Commercial Service or Reliever Airports would enhance capacity in major metropolitan areas and reduce current and projected flight delays are designated for this program.
- o The MAP provides that a set-aside of about 2.25% of the AIP funds be distributed to the twelve designated airports to achieve the conversion of these airports to provide system capacity.
- o It is noted that the MAP was developed prior to the Military Base Closure and Realignment process, since it is anticipated that with the 1988, 1991, 1993, and 1995 Base closures over 50 major military bases will be transitioned to civil airports or converted to other uses, if civil airport sponsors do not elect to sponsor or operate the airfields as civil airports.
- o The 1988, 1991 Base Closure Program presently includes 25 military airfields, most of which are being converted to civil airports. It is anticipated that on the average federal investments of \$1.0 billion at each base or including the 1993 proposed locations, about 43 billion of airport infrastructure is available for conversion to civil airports. With proper promotion and development, these airport conversions can be used to develop numerous new civil jobs.

- o The 1993 DOD program has identified an additional 18 bases for closure or realignment, many of which are anticipated to be converted to civil airports if civil airport sponsors are willing to operate the facilities as civil airports.
- o It is estimated that of the 43 military base closures about 25% have the potential of become commercial service airports, about 50% reliever airports and the remaining 25% general aviation airports.

1/ Current military bases are only eligible if there is a civil/military joint-use agreements

The list of designated airports for the military airport program follows:

AIRPORTS DESIGNATED TO RECEIVE MILITARY AIRPORT PROGRAM FUNDS

Current (Joint-Use) Agreement & Former Military Airports:

Listed in Order of Designation

<u>Name Airport</u>	<u>Associated</u>	<u>Airport Role 1/</u>	<u>MAP Funds Received (millions)</u>
1. STEWART INT'L (NY)	Newburgh	PR	12.0
2. ELLINGTON FIELD (TX)	Houston	PR	10.0
3. MANCHESTER MUNI (NH)	Manchester	PR	9.4
4. GUAM INT'L AIR TERMINAL	Agana	PR <u>2/</u>	11.4
5. MYRTLE BEACH AFB (SC)	Myrtle Beach	PR <u>3/</u>	8.7
6. ALBUQUERQUE INT'L(NH)	Albuquerque	PR	9.2
7. SCOTT AFB (IL)	Belleville	RL <u>4/</u>	15.0
8. LINCOLN MUNI (NE)	Lincoln	PR	9.0
9. TO BE SELECTED FY-1993			
10. TO BE SELECTED FY-1993			
11. TO BE SELECTED FY-1993			
12. TO BE SELECTED FY-1993			

Note: Except as footnoted all airports designated are former military airfields. Also civil airport sponsorship under the Airport Improvement Program (AIP) including the Military Airport Program requires, other than for planning purposes, that the civil airport sponsor must have a Joint-Use Agreement, Long Term Lease Agreement (20 years or more) and/or hold Title to the Airport Property to qualify for AIP capital development funds.

1/ Airport Role Designations:

PR Primary Commercial Service Airport (10,000 enplaning Passengers)

RL General Aviation Reliever Airports

2/ Current Military Base with Joint-Use agreement (1993 DOD Proposed Closure)

3/ 1991 Military Base Closure Airport (Had Joint-Use Agreement)

4/ Current Military Base with Joint-Use Agreement

A list of airports that responded to our notice about the program follows. The Secretary of Transportation is to designate four additional airports from the listing.

AIRPORTS REQUESTING MILITARY AIRPORT PROGRAM FUNDS

<u>Eligible Airports Requesting MAP funding:</u>	<u>Region</u>	<u>FAA</u>	<u>Airport</u>	<u>Role</u>
1. ATLANTIC CITY INT'L AIRPORT	Atlantic City	AEA		PR
2. DOVER AFB (DE)	Dover	AEA		CM
3. HARRISBURG INT'L AIRPORT (Olmstead AFB)	Harrisburg	AEA		PR
4. NEWPORT NEWS P.H. INT'L (VA)	Newport	AEA		PR
5. NIAGARA FALLS INT'L (NY)	Niagara Falls	AEA		CR
6. STEWART INT'L (NY)	Newburgh	AEA		PR 1/
7. CHANUTE AFB (IL)	Rantoul	AGL		RL
8. RICKENBACKER ARPT(OH)	Columbus	AGL		RL
9. SCOTT AFB (IL)	Belleville	AGL		RL 1/
10. BANGOR INT'L (ME)	Bangor	ANE		PR
11. BRADLEY INT'L (CT)	Windsor Locks	ANE		PR
12. MANCHESTER MUNI (NH)	Manchester	ANE		PR 1/
13. PEASE INT'L (NH)	Portsmouth	ANE		CM
14. CENTRAL FLORIDA REGL (FL)	Orlando	ASO		PR
15. CRAIG MUNI (FL)	Jacksonville	ASO		RL
16. HERLONG (FL)	Jacksonville	ASO		RL
17. MYRTLE BEACH AFB (SC)	Myrtle Beach	ASO		PR 1/
18. OPA LOCKA (FL)	Miami	ASO		RL
19. ORLANDO INT'L (FL)	Orlando	ASO		PR
20. SMYRNA (SMYRNA-RUTHERF)	Smyrna	ASO		RL
21. ALBUQUERQUE INT'L(NM)	Albuquerque	ASW		PR 1/
22. BERGSTROM AFB. (TX)	Austin	ASW		PR
23. EL PASO INTERNATIONAL ARPT & BIGGS AAF (Joint use)	El Paso	ASW		PR
24. ELLINGTON FIELD (TX)	Houston	ASW		PR 1/
25. ENGLAND INDUSTRIAL AIRPARK(LA)	ALEXANDRIA	ASW		PR
26. LAREDO INT'L (TX)	Laredo	ASW		PR
27. MIDLAND (TX)	Midland	ASW		PR
28. BROWN FIELD, (CA)	San Diego	AWP		RL
29. GEORGE AFB (CA)	Victorville	AWP		CM/GA
30. GUAM INT'L AIR TERMINAL	Agana	AWP		PR 1/
31. LIBBY AAF/SIERRA VISTA MUNI	Sierra Vista	AWP		CM
32. NORTON AFB (CA)	SanBernardino	AWP		RL
33. PALMDALE AFB/PLANT 42(CA)	Palmdale	AWP		PR
34. WILLIAMS AFB	Phoenix	AWP		RL
35. LINCOLN MUNI (NE)	Lincoln	ACE		PR 1/
36. RICHARDS-GEBAUR, (MO)	Kansas City	ACE		RL

Airports Requesting MAP funding--Not Eligible

o BLACKSTONE AAF, VA	Blackstone	AEA	GA	<u>3/</u>
o CLINTON-SHERMAN (OK)	Clinton	ASW	GA	<u>3/</u>
o CHENNAULT INDUSTRIAL AIRPARK, LA	Lake Charles	ASW	GA	<u>3/</u>
o DILLINGHAM AIRFIELD(HI)	Mokuleia	AWP	GA	<u>3/</u>
o JACKSONVILLE INT'L(FL)	Jacksonville	ASO	PR	<u>2/</u>

PR Primary Commercial Service Airport (10,000 enpl. Passengers)

CM Commercial Service Airports (2,500 to 9,999 enpl. Passengers)

CR Commercial Service/Reliever Airport

RL General Aviation Reliever Airports

GA General Aviation Airports

1/ Airport previously designated to receive Military Airport Funds

2/ Not Eligible--not a current/former military airport

3/ Not Eligible--General Aviation Airport

JOINT USE

In those areas where there are capacity problems we have worked with potential sponsors to request property and work with the appropriate military services to approve joint use where it is practical and contributes to alleviating capacity problems in the nation's airports system.

Additionally, we have provided planning grants and airport improvement grants to joint use airfields. Examples are: Scott Air Force Base which is a reliever for St. Louis Lambert Field, and Charleston Airport/Air Force Base.

What are it's future plans?

Military Base closures and realignments provide an excellent opportunity for promoting joint use. We will promote it for those bases that are designated for realignment and not complete closures. Usually, military air reserve and air guard units will remain. Joint use allows the military to remain at a substantially lower cost, while placing additional large airports in the nation's airport system. Potential candidates include NAS Memphis in Millington, TN and McGuire AFB in Wrightstown, NJ. A joint use agreement is being finalized at El Paso International with Biggs Army Airfield.

LIMITED JOINT USE AGREEMENT FOR EL PASO, TEXAS

Mr. COLEMAN. I was interested, too. I know the Army has authorized Fort Bliss to open negotiations with the City of El Paso for a limited joint use agreement, and I did not know whether or not there was any funding available from FAA for that purpose or whether or not you are indeed capable even after, let's assume, any of these eight that you spoke of, are you able to provide technical assistance available to airports for the program?

Mr. BELGER. We are aware of the efforts in El Paso. I cannot commit to you that would be one of the four airports added to the military airports program, but we are aware of it. We think we know the benefits of that effort between the civilian folks and the Army folks to join the two airports. It is, quite frankly, a question of priority. It is on our list and we will look at it.

MILITARY AIRPORT PROGRAM

Mr. COLEMAN. I am not asking about that, I am just asking if you have any of those that have made the list—you said eight. Of those, I guess my question is: What kind of technical assistance are you able to provide to the civilian airport?

Mr. BELGER. Primarily in the form of funding for planning or for specific pavement work, taxiway work, any of those types of projects that would be eligible for AIP funds.

Mr. COLEMAN. What was the amount of the request for fiscal year 1994 for that segment? You said \$7.6 million, but that was the F&E account for the AIP program. What was the request.

Mr. BELGER. I might have to defer to Mr. Taylor on that. Let me check my notes for one second if I could. If not, we will give that for the record. It is possible we have not formulated the precise dollar amount yet because we have not picked those other four airports.

I can tell you that it is going to be, I think, about \$40 million, as I recall off the top of my head, for this year. So I would imagine that for 1994 would be in that same ball park.

Mr. TAYLOR. It would be.

Mr. COLEMAN. When you do those, you don't expect those necessarily to be finished within one given fiscal year? You would expect those would be things that would also spread out over several years perhaps.

Mr. BELGER. Yes, sir. Most of the airports projects are not completed in one year.

Mr. COLEMAN. Okay. Thank you very much.

Thank you, Mr. Chairman.

Mr. CARR. Mr. Wolf, do you have any questions?

Mr. WOLF. No. Thank you, Mr. Chairman.

Mr. CARR. Returning again to—

Mr. WOLF. Mr. Chairman, before I forget, Mr. Skeen asked that questions be submitted for the record.

Mr. CARR. Without objection, you will answer the questions submitted by Mr. Wolf on behalf of Mr. Skeen.

ROSWELL, NEW MEXICO, ASR-9 RADAR

Mr. SKEEN. For the past two years, I have worked to secure direct appropriations for an ASR-9 radar approach control facility located in Roswell, New Mexico. However, in mid-1992, several officials within the Federal Aviation Administration have sought to remote this radar to Lubbock, Texas. My questions to you pertain to this situation.

Recently, I wrote to Secretary of Transportation Peña to express my support for securing a direct approach control facility in Roswell, Peña stated that the FAA is currently conducting feasibility studies. When will these studies be completed?

[The information follows:]

The Southwest Region completed the feasibility/cost comparison study in February 1993.

Mr. SKEEN. Could you give me a breakdown of the costs of this project, both through congressional earmarks and the FAA's internal budget?

[The information follows:]

The regional feasibility/cost comparison study contains a breakdown of all costs associated with the options for the Roswell ASR-9.

CRITERIA TO GRANT "STAND ALONE" STATUS

Mr. SKEEN. It is my understanding that although the FAA has plans to consolidate approach control functions to central facilities within the next decade, several such facilities have been granted "stand alone" status by the FAA, such as those in Moses Lake, Washington, and Aspen, Colorado. What are the criteria used in granting "stand alone" status?

[The information follows:]

The decision to grant "stand alone" status to locations such as Moses Lake, Washington and Aspen, Colorado was made prior to the FAA's decision to place a moratorium on new TRACON establishment. All airports are subjected to personnel/staffing, cost/benefits and quality of service considerations before being considered for new establishment or replacement of air traffic services.

Mr. SKEEN. Is the level of traffic operation and the uniqueness of airport functions included in these criteria?

[The information follows:]

The level of traffic operation is a factor in the cost/benefit calculations, uniqueness would not be a factor. However, uniqueness is factored in when determining operational requirements.

STAND ALONE STATUS FOR ROSWELL TOWER

Mr. SKEEN. Given that the Roswell Tower has far exceeded the Phase I ASR establishment criteria, based on air traffic operations, during the past 12 years, and the uniqueness of Roswell's air taxi operations, which include military flight, general flight training, air taxi operations, aircraft testing, and corporate aviation interests, would consideration of these qualities be included in an FAA assessment of the fitness of the Roswell Tower to be granted "stand alone" status?

[The information follows:]

The uniqueness of Roswell's flight operations would not be a major consideration.

Mr. SKEEN. Throughout 1992 and these months of 1993, the traffic at Roswell Airport has increased dramatically, due largely to the expansion of Holloman and Cannon Air Force Bases and their subsequent increased usage of the Roswell airfield for both low approach and "touch and go" landings. As a result, both the traffic and the safety needs of Roswell Industrial Air Center have increased dramatically.

Will this increase in RIAC usage be taken into account in the determining whether to grant RIAC a stand alone radar?

[The information follows:]

The military "low approach" and "touch and go" activity is not a factor in the cost/benefit calculations for TRACON establishment.

ROSWELL—LIMITED APPROACH STATUS

Mr. SKEEN. Currently, the RIAC approach control radar has been downgraded by the FAA to a "limited approach" status, which only covers air traffic within two to three miles. RIAC officials have insisted that this is inadequate to safely cover even Roswell airspace, and totally fails to cover the airspace around the towns of Ruidoso, Artesia, or Carlsbad.

Will the FAA take these safety concerns into account in their decision?

[The information follows:]

Yes, when the ASR-9 is established at Roswell, it will provide radar coverage of the area within 60 miles of Roswell. The radar data from the Roswell ASR-9 will be remoted to an established TRACON which will provide full radar services in the Roswell area.

Mr. SKEEN. Is the FAA aware of new studies that have shown significant cost savings in granting Roswell "stand alone" status?

[The information follows:]

No, the Southwest Region conducted a feasibility/cost comparison study in February 1993 that documented that the remoting of the radar data to Lubbock would result in substantial cost savings over establishing a "stand alone" radar facility at Roswell.

COST BENEFIT RATIOS FOR ASDE-3 RADAR SITES

Mr. CARR. Returning to the ASDE-3 radar, we have a difficult situation here in funding because, and I am referring to the break in the production line. One of the reasons why this Committee added 10 systems was to prevent a break in the production line.

And as testimony indicated, the production line has been broken. So we are going to have some start-up costs again and that was exactly what the Committee was attempting to avoid.

How do you plan on addressing those?

Mr. TURNER. If we are able to buy seven units, that leaves funds available to handle that. I believe, in talking with my program office, the amount of funds necessary to start the line are very, very minimal. We do not think they will be a major impact.

It was not our desire to have this take place. When we went sole source, we were required to go out in Commerce Business Daily to determine whether anybody else was interested or could provide this service? We did get a very serious response from a firm that does provide these type of radars.

We had to stop, do the analysis on that, formally address it and respond back to that company as to why it was appropriate for us to continue the activity to Norden. That took time. It also took time working in parallel to develop the procurement documents to provide those to Norden for them to respond back to this.

Mr. CARR. Let's get back to the sites. Last year, when we named the sites to receive the 10 systems, it was based on FAA's testimony that those sites met cost-benefit criteria. Now we are told the original study was only a draft and that two of those sites didn't really qualify. Now you have testified two more have dropped.

Are there two more sites that now meet criteria? We are a little confused here. We were at 11 systems. Four were dropped because they didn't meet criteria, leaving seven. However, we were told that there are two more that now meet the criteria that were not on the original list.

Can you confirm that, or is that an error on our part?

Mr. DEL BALZO. We started out with 11. There are two that do not meet the cost-benefit criteria, Albuquerque and Albany. There are two others, Phoenix and Las Vegas, that we have concluded would not make sense for operational reasons, which I am not prepared to discuss—maybe someone else is able to do that.

Phoenix and Las Vegas continue to meet the cost-benefit criteria, but for operational reasons, we would see no value in having them there. But there are a total of four out of the 11 that we would not recommend going ahead with.

Mr. CARR. Someone at FAA mentioned to staff that Nashville and Salt Lake City—

Mr. DEL BALZO. I am not aware of Nashville and Salt Lake City. John?

Mr. TURNER. Those were potential sites but did not fall within what we considered the priority of funding and going forward with. That determination was reached by working with our air traffic colleagues.

Mr. CARR. What was their cost-benefit ratio relative to the other sites? Was it—

Mr. TURNER. It was below any site that we are asking for.

Mr. CARR. Do you happen to know what the cost-benefit ratio was on that?

Mr. TURNER. I do not have that.

Mr. CARR. Can you supply it for the record?

Mr. TURNER. Okay.

[The information follows:]

Using current benefit/cost criteria, the Nashville benefit/cost ratio is 0.5. Salt Lake City did not meet initial criteria which qualifies a site for consideration; thus, no benefit/cost analysis was done for Salt Lake City. Qualifying sites produced a benefit/cost ratio of at least 1.0.

DEVELOPMENT OF LOW COST ASDE RADARS

Mr. CARR. So in other words there are not really two new sites to be thinking about.

There has been some talk over developing a low cost ASDE. Tell us what you are planning in this regard and how it might affect the ASDE-3 program.

Mr. DEL BALZO. That is a program that Marty Pozesky is pursuing in his research.

Mr. POZESKY. Mr. Carr, as part of the work we have done at Boston Logan to look at runway incursions, we actually developed two products from that program. One was a runway alerting system to prevent aircraft from crossing active runways, and the other was what amounts to a low cost ASDE.

The lab that did the work for us was MIT-Lincoln Labs. They took a marine radar, not a Marine Corps but a marine shipboard radar and put some sophisticated signal processing on that radar and have produced a very, very respectable ASDE.

People talk about buying an ASDE like that for maybe several hundred thousand dollars or half a million as opposed to the current ASDE which is substantially more expensive.

I would describe it as a by-product of our development effort. We started out to develop a runway incursion prevention system. In order to do that, we needed a radar to drive that system. We did not have an ASDE-3, so Lincoln Labs put this together. It works and is impressive. Some of us have seen it and we are taking a look at that as a possible application in the future for lower cost at sites that probably don't have the demand for ASDE-3.

As you well know, if the unit is less expensive you can have more sites that qualify. So we have a less expensive one. We are right in the middle, obviously, of trying to figure out whether it makes sense to actually propose a low cost ASDE program to be built upon that. I would say that it probably does make sense for us to propose that technology.

ASDE-3 UNIT COST

Mr. CARR. What is an ASDE-3 radar cost per unit?

Mr. TURNER. Less than \$3 million.

Nick Stoer points out that would be a unit cost. If you have to build a tower for it or if you have to strengthen a tower or the site prep, things like that can double that cost. You have to specifically look site by site.

IVHS TYPE TECHNOLOGY FOR RUNWAY INCURSIONS

Mr. CARR. Let me ask Marty Pozesky whether you have been looking at IVHS type technology to solve the incursion problems?

Mr. POZESKY. Yes, sir. If by that you mean map driven displays to the cockpit—

Mr. CARR. No.

Mr. POZESKY. No, okay.

Mr. CARR. I am talking about smart runways rather than the smart airplane. It would seem to me some of the technology that I have seen located along the runways, at runway intersections, could be applicable to solving the problem.

And given the degree to which IVHS is going to be implemented throughout the country, that conceivably, conceptually, some of these problems would be fairly low cost, recognizing that in the airport environment you would have to have certain enhancements for that environment alone.

But the basic conceptual thrust of IVHS is that a sensor along the highway is going to be able to identify vehicles and do it in a very sophisticated way.

Mr. POZESKY. We have looked at that. Some companies have come in and looked at various ideas for airport and runway incursion. We have looked at infrared sensors on the airport surface. We have looked at buried loops. We have looked at reading stop bar codes. And at the moment, all of them have applicability, but fairly limited applicability.

I guess our conclusion is that they are not going to work as well as this technology that we are looking at right now.

The limitation is, first of all, in ice and weather for buried sensors. The other part of the problem is that much of this technology requires 100 percent or at least a large percentage of the equipment package on the aircraft, on-board technology.

And what we have done thus far—although I still say it is a promising technology for airport surface—we have done with this runway incursion in the stop bar system seem to work quite well.

So if I had to characterize our long-term solution, it would be not with smart runways but with smart aircraft. We actually think GPS application on the runway would provide a map display to both the pilot and the control tower. You could draw a map in the cockpit of where the pilot is and where he is on the runway.

I would characterize that as probably what we think our solution is three or four years from now. We are again requesting funds this year, in this year's R&D budget, to pursue that technology.

The stop bar work we have done with radar seems to work really well and we are happy with it. We have done some research. I wouldn't call it limited just because we have not put a lot of money into it, but initial looks at buried sensors, infrared detectors, those sorts of things and have run into problems like weather, snow coverage and those kinds of areas.

IVHS TYPE TECHNOLOGY

Mr. CARR. Well, I think it is fairly clear, even in IVHS they are going away from buried sensors. Those have a very severe reliability problem, but video detectors have made amazing strides. Video cameras. Small. The size of your finger.

Mr. POZESKY. Let me take an IOU, if I can, and come back with a more complete answer. I know our folks have looked at it. I am just not real conversant with that kind of technology.

Mr. CARR. One of the problems they face in the highway application was that they had to solve the video problem in low contrast situations where you have very, very low visibility with the naked eye but yet the camera had gotten it. And they solved that problem, that was one of the breakthroughs, and to do it in a very, very small size.

I would think the major problem at an airport would have to do with some height restrictions because, of course, the application on the highway has to shield the video sensor itself. It is pointed downwards and that would be a technical problem to look at.

Mr. POZESKY. There is another problem on the airport that is probably worth mentioning as you are thinking about this. What

you really want to do is detect the approaching aircraft, as well as the aircraft that is a mile from touchdown, so that an aircraft would not be cleared onto a runway as an aircraft is approaching.

So that is one of the things radar does for us pretty well because we can connect that. I will take an IOU and get back with you. I am not personally familiar with that technology.

Mr. CARR. All right.

[The information follows:]

The problems experienced with surface sensor reliability in highway applications are usually moisture penetration problems along the pavement saw cuts where inductive loops are installed, or in the miles of communications cables linking the sensors. In applications on airports, two surface sensor technologies show promise and eliminate the highway problems. One is the inductive loop, installed below the pavement during new runway/taxiway construction. This isolates the loop from weather and moisture. The loop can easily detect the presence of aircraft, determine direction of travel, and velocity. The loop is not affected by snow or ice on the airport surface. The second sensor is a magnetic detector, which is about the size of a postage stamp. This sensor slides under the pavement in a plastic pipe or can be installed in the edge or centerline light fixture. The sensor is designed to operate in wet conditions and can be replaced much more easily than the highway sensors.

The primary application of smart runway sensors is to operate airfield lighting segments and detect intrusions. Because they provide surveillance only at the point where the sensor is installed, these sensors cannot be used for area surveillance like radar and GPS position operating. The surface sensors show enough promise that the airport community and FAA have initiated a special committee within the Radio Technical Commission on Aeronautics to develop standards for manufacture and installation of surface sensors for lighting control. The airport of the future will rely on a mix of surveillance sensors with data fused together to produce a situational display for the controller.

With respect to using video cameras, the FAA has experimented with normal, low-light, and infrared video. The area of coverage is so small that the application is limited to watching the passing of an aircraft at a specific taxiway. To get airport coverage, the control tower would need to be converted to a video display facility, losing the continuity of coverage that is so vital to moving traffic on the ground. Highway applications of video can watch only certain segments of the roadway, a toll booth, a bridge, or a complex interchange. The coverage is also limited by bad weather. In air traffic control we need to see the total environment in all weather conditions.

Neither the video technology nor the surface sensors solve the problem of monitoring aircraft that are about to land. This is currently being done as part of our airport movement area safety system (AMASS), which is under testing at San Francisco. Here we combine radar data from the surface (the ASDE-3) with the terminal surveillance system (ARTS) to get the total picture. The radar information is processed through safety logic, which alerts the controller of any conflict.

ASDE-3 SPLIT TARGET PROBLEM

Mr. CARR. Now, you are requesting funds in your fiscal year 1994 budget to solve the split target problem of ASDE, even though this was a phenomenon that was predicted back in 1981, I am told. The GAO raised the issue last year and in your statement I read previously, you said it was solved. Apparently it has been a recognized problem, but you apparently in the past have said that it was a low priority problem.

Now, with all of our tough budget constraints, now you are asking for money for that. Can you explain why?

Mr. TURNER. Our budget request is \$12.6 million; 8 million for remote tower configurations at some airports that would require it; logistics and integrated supply support for another \$2 million; and \$2.6 million for software upgrades and reliability.

There are some software changes that we need to make in preparation for AMASS. As was mentioned earlier by Mr. Del Balzo, the

San Francisco prototype is working out very well. We have controller teams out there right now looking at that. In fact, we have informally heard requests they would like to try it out in the tower for a while because it has been effective. This allows us to develop the software necessary to feed the AMASS system and make that a tighter connection.

The split target is a natural phenomena of the radar, which means in a wide body or a large aircraft, you are going to get multiple returns. The return on the display the controller uses is an actual display of the presentations back from the radar. There is no intelligence that tries to combine returns.

So a controller will actually see the airplane as it turns and may get multiple reflections off of it. The human mind and eye can see that. We have had no problems with the controller saying, gee, that is one aircraft. When you start putting that into an automation system, it is necessary to make sure we don't get a false alarm, you have a bit of another problem and that is part of the software upgrade we want to continue to work here.

Mr. BURT. Mr. Carr, if I may. Last year we said that we could work with the problem in the towers where it was being used visually, as Mr. Turner just said, but that we would be testing a solution to that problem in the AMASS. We have not completed that solution and that is why we would still be working on it throughout the remainder of this year and next year.

I am sorry if we misled you last year. We did not mean to imply the solution was in hand, only that it would have to be solved in the AMASS and that is where we were testing.

Mr. CARR. I don't think we are accusing you of misleading us, it is just that we want to reconcile these points which appear to be at variance.

I am intrigued by something you said, though, and I am not as familiar with ASDE-3 as I probably should be. You are telling me, though, that the display is a raw radar return? It is not digitally enhanced in any way?

Mr. TURNER. It is a presentation of the returns coming off the aircraft. It is digital display, but the returns are placed on there as—

ARSR-4 RADAR COST OVERRUN

Mr. CARR. They are raw returns. I understand your answer now. Okay.

Let's move to the ARSR-4 radar. This program has also experienced cost overruns. The GAO status report on FAA modernization programs refers to a settlement reached between FAA and the prime contractor, Westinghouse, whereby Westinghouse would drop most of their past claims and in return, the FAA would waive the economic price adjustment clause of the contract, in effect allowing more funding. Sounds like a pretty good deal for them. They stop threatening us with claims and we give them more money.

Would you explain that deal to us?

Mr. DEL BALZO. This is a subject that both John Burt and John Turner are involved in.

Mr. TURNER. Let me take exception to your characterization of that.

Mr. CARR. Please.

Mr. TURNER. This program has not increased in funding. The baseline has remained the same. What was in that contract is an economic price adjustment that was tied to key indicators that were supposed to give an indication as to what they would pay for parts and subs to work on the program. Westinghouse and the FAA took a look at that. Westinghouse documented to us that their costs were substantially greater than what those indicators said.

If we had stuck by the letter of the contract, it would have required Westinghouse to pay us back a substantial amount of money. Westinghouse is in a loss situation on this contract. They are stepping up to that and continuing to produce. They did not want to be further impacted.

We came to the conference table with our contracts, legal and program office personnel, working with Westinghouse, on compensation for that economic price adjustment being deleted. They agreed not to pursue any claims, and a number of other issues were resolved. We were able to walk away continuing to work the program.

We extended the option to buy the additional six units we need to complete the system around the perimeter of the United States to give us a total of 40 units. I believe that we are in a partnership with our contractors, that we need to work a contract, we need to work where we are in a program and to make it happen.

Westinghouse is still in a loss condition. We have some difficult times to go forward. It is a difficult posture to be in when you are working with a contractor who is losing money on a contract.

Mr. CARR. Have you paid more than the original firm fixed price?

Mr. TURNER. No, we have not. We have expended 86 percent of the funds on the contract now. If you look at our external baseline for the project, we are approximately three months behind. If you look at internally the contract management documents, the program has slipped 14 months internally.

Most of that has been caused by difficulty in getting the high-powered transistor they need for the unit. The source quit making them. Westinghouse had to step up and we worked with Westinghouse to get that solution.

Technically, it looks like a very good program to us. Financially, we have some tough times ahead of us, sir, to work with Westinghouse in this situation. We are finding as these major contracts, with DOD, as they downsize, they have fixed costs that they cannot quickly offload. And it is such, they have a tough time where we have continuing contracts with them.

ARSR-4 RADAR

Mr. CARR. Apparently, the deal results in Westinghouse paying about \$17 million to the FAA. However, if you don't procure the last six systems before June 1, 1994, the FAA will have to pay them about \$17 million more than they had planned.

Why would you enter into such an agreement when I understand it is the policy of the agency to base decisions more on performance than fixed dates?

Mr. TURNER. The performance indicators we have on this system are very good, sir, and my engineers are very positive about it. The support contractors I have monitoring this contract with us are very positive about it. We are in the throes of exercising that option. We have money in the 1993 budget to support that. We want to make sure that the operational testing that will start in the next few weeks at Mount Laguna go right.

The pre-factory testing we have seen at Mount Laguna has been good to this point. As soon as we see that is right and everything looks good, we will then exercise those options.

Mr. CARR. I think the point, though, is that this may be what you are going to achieve from an operational point of view. But the contracts you signed don't know about that. Contracts only know about dates.

Mr. BURT. If I may, Mr. Carr.

Mr. CARR. It would seem it is a deviation from the FAA's policy, which is——

Mr. BURT. This is a contract that was signed before we made the changes we have over the last several years in the way we contract. Clearly, it had calendar based options in it, many of them. The one we are discussing now was originally planned for March of this year to exercise the option for six radars, which are the final radars we had intended to buy as a part of the fixed set of radars for the Air Force and the FAA to go around the perimeter of the country.

There was a further option in the contract that was out in time that allowed us to buy additional radars if desired. The price on each of these options varied depending on when it fell in time. When we negotiated the agreement back in January, we got a significant extension in the March 1993 order date at the same price.

The cost that you refer to there is if we subsequently decide not to exercise that option before it expires and goes into the final option, then the price of the radars goes up.

So, yes, I would agree with you, this is not within the policy of the way we write contracts today. It is a contract that we are trying to execute as best we know how given that it is with us and has been with us for a number of years. And we thought that since with your advice and counsel last year we had agreed not to order those final radars until we had some test data on the first radar at Mount Laguna, it was in our best interest to try to get that date extended as far as we could out into the future so we could preserve our openings at the lower cost. But since it was already calendar related, we were unsuccessful in getting the contractor to take the calendar limit off of it entirely.

Mr. CARR. What is the unit price?

Mr. TURNER. About \$7.2 million.

Mr. CARR. \$7.2 million. That is without installation and site prep?

Mr. TURNER. Yes.

STUDY ON FPS-117 RADAR

Mr. CARR. A study commissioned by the FAA indicated there were viable off-the-shelf radar systems in production such as the FPS-117 radar made by GE.

Could you tell us why you asked for this study, what were its results and whether you intend to buy any of these other, apparently cheaper, radars? Can you tell us what an FPS-117 radar would cost?

Mr. POZESKY. Mr. Carr, I think the study you are referring to is a study we did in trying to focus on what we would do for follow-on to the ASR-9. I don't think it was—if I am thinking about the study that you are referring to, it is not specifically looking at an alternative for ARSR-4.

The study was done about a year ago. The study did look at what our strategies were to go beyond if we needed a next generation terminal radar. It concluded there were off-the-shelf radars—let me restate that. There were nondevelopmental items, which is a term which means they probably don't have to do a lot of research and development to achieve it, but they are not really off-the-shelf. There are radars that could compete effectively with the ASR-9 job for the technical needs.

Our conclusion is, if we go ahead with a follow-on to ASR-9, we need to look at that. I don't want to mislead you. The issue of the follow-on to the ASR-9 is a complicated issue in and of itself. We have not made a decision to move in that direction even internally right now.

Mr. CARR. I have a couple of questions for the record.

OCEANIC DISPLAY AND PLANNING SYSTEM

Mr. CARR. In a September 1992 report, the GAO expressed serious concern over the need for FAA's Ocean Display and Planning System, ODAPS, and recommended that ODAPS not proceed further without analysis of alternatives.

What is your opinion of the GAO's report, and have you made any changes in the ODAPS program as a result?

[The information follows:]

The FAA largely concurs with the GAO report. We are incorporating the management actions recommended by the GAO including; a major review of Oceanic Air Traffic Control (ATC) System status, initiating an ODAPS conflict probe, independent verification and validation team, initiating capacity management activities, and performing a thorough analysis of alternatives for the future Oceanic Automation System. These actions are scheduled to be completed by the end of June 1993.

LIMITED LIABILITY CORPORATION FOR TELECOMMUNICATIONS

Mr. CARR. I understand that the FAA is promoting the idea of a limited liability corporation for development of the Aeronautical Telecommunications Network.

What exactly is the Aeronautical Telecommunications Network, and why can't it be developed without an exotic new organizational arrangement?

[The information follows:]

The Aeronautical Telecommunication Network (ATN) is the International Civil Aviation Organization (ICAO) standard for the future air/ground and ground/ground communications infrastructure. It allows the interconnection of a diverse

collection of air/ground and ground/ground subnetworks (e.g., satellite, very high-frequency [VHF], Mode S, wide area networks, and local area networks). These subnetworks in turn provide global connectivity and message transfer among a diverse collection of computers (e.g., flight management systems [FMS], airline operations computers, and FAA air traffic control [ATC] and flight information computers).

The most significant impediment to realizing the ATN today lies in the current development and implementation process. Typically, a full system development cycle from the initial paper design to availability of production equipment has repeatedly taken 10 to 15 years. As a result, the FAA and industry have missed implementation opportunities, and have seen technology advances overtake outdated designs. The new approach which uses a cooperative agreement (under [49 USC App. 1353 and Department of Transportation (DOT) Order 4000.A]) between the FAA and a private consortium made up of airlines, allows for the development of ATN on an accelerated basis by leveraging the participants' individual R&D investments. It ensures that the companion airborne and ground components of the ATN are developed concurrently with the full participation of users (i.e., airlines) and avionics manufacturers.

The Limited Liability Corporation (LLC) is one of several vehicles for establishing the private consortium. However, the consortium members will select an organizational structure that supports the specific requirements and priorities of the consortium members and the government. It should be noted that many other government agencies use the cooperative agreement vehicle to assist industry in maintaining technological leadership and U.S. global competitive edge (e.g., Department of Energy and the U.S. Advanced Battery Consortium).

Mr. CARR. Why couldn't the government involvement in this venture be handled through contracts, cooperative R&D agreements, or other existing financial instruments?

[The information follows:]

The public/private industry collaboration model being proposed requires the FAA to establish an assistance relationship with the airline industry to expedite development of the airborne and ground components of the ATN. In establishing this type of relationship, the FAA needs to have the flexibility to make contributions in the form of in-kind services, facilities, and/or cash. To this end, the government has proposed the use of a cooperative agreement (under [49 USC App. 1353 and Department of Transportation (DOT) Order 4000.A]) which would allow the FAA to provide the private consortium with resources and contributions in the form of services-in-kind, facilities, and/or cash. It would also allow the government to maintain substantial involvement in the project with shared responsibility for management, control and technical direction during the product design and development phases.

The cooperative R&D agreements (CRDA) are too restrictive in that they limit the FAA's contributions to in-kind services and facilities only. The contractual vehicle does not provide the flexibility required for this type of government/industry collaboration.

Mr. CARR. Will this require new legislative authority, and if so, has that been sent to the appropriate legislative committees?

[The information follows:]

The FAA has informally discussed this project with the key Congressional staffers. In addition, recently the FAA has advised Congress through the Appropriation hearings/process on the agency's intent to move forward on this initiative. The FAA is also working to add to the FAA's reauthorization package appropriate language to more clearly identify cooperative agreements as a type of assistance relationship suitable for research, development, and demonstration projects, where the primary purpose of the project is the ultimate commercialization and utilization of technology by the private sector.

FAA'S LIABILITY FROM LAWSUITS AND LITIGATION

Mr. CARR. Another question that we have generally asked over the years that I would like you to supply for the record is the question of what the FAA's exposure would be if all litigation against the FAA were to be resolved in favor of the plaintiff. That is a figure that we track every year just to monitor what is going on in

our litigious society with regard to the Federal Aviation Administration.

[The information follows:]

The Federal Aviation Administration's (FAA) exposure would be \$41.5 billion if all lawsuits and litigation against the FAA were to be resolved in favor of the plaintiff.

Mr. CARR. We have VSCS questions that we will ask for the record.

VOICE SWITCHING AND CONTROL SYSTEM

Mr. CARR. In its status report on FAA modernization programs, the GAO says that your decision to pursue only limited facility consolidation may raise costs for the Voice Switching and Control System above the current estimate by as much as \$432 million.

What would account for such an increase?

[The information follows:]

The VSCS program budget already includes the New York Metroplex Control Facility (MCF) as one of the MCF's that will be required under limited consolidation. The cost of acquiring and installing VSCS's in other than the New York MCF will be funded in the respective MCF programs. The cost for the additional VSCS's will be based on the position requirements for these facilities which will be determined within the next year.

AIRWAY SCIENCE PROGRAM

Mr. CARR. Before turning to Research, Engineering and Development, I would like to ask you a few questions about the Airway Science Program. I might indicate to you and on the record that the Committee has asked the General Accounting Office to take a vigorous look at university research programs.

It happens to be my personal observation that this program, while it may have a well-intended initial benefit to the FAA and to the traveling public, has become misused or abused in ways that serve to divert important transportation funds to something that is of a nontransportation nature.

I want to make sure whatever we do in the airways sciences program is making a return of investment to transportation. And it occurs to me, through no fault of the FAA necessarily, indeed a lot of past practices in the Congress, a lot of the FAA money has been used to build buildings for colleges in the districts of Members of Congress who were able to successfully plead their case. Instead of aiding transportation, we were aiding colleges and universities in their ambitions for facilities.

So I guess I would like a broad question, a broad answer to a question, basically. Put the best face on the Airway Science Program. What is the core of what it is we should be funding?

Mr. DEL BALZO. There are two parts to the Airway Science Program. The program goes back to 1982 following the air traffic controller strike where we had a goal to make available to the aviation industry and to FAA some high-quality graduates that had a grounding in aviation. Our intention in 1982 was to work with the educational institutions to establish what we call a standardized airway science curriculum.

As a result of what we have been able to do, and I think we are now working with some 50 some institutions where we have stand-

ardized this curriculum, I believe we have come a long way in reaching that first goal. FAA has hired, as a result of that program, just under 400 graduates. The industry has hired hundreds more. So I think from a curriculum development standpoint, we did what we set out to do, and though I can't quote the investment that was made, it was a minimal investment.

There is a second part of that program that has to do with educational grants and that focused on the establishment of educational facilities, educational laboratories, putting capabilities in place. I look at the capabilities that have been put in place and I would say they are fairly impressive aviation resources that are now out there.

I would be less than candid, whether we were taking advantage of those capabilities or whether or not the aviation industry was taking advantage of the aviation capabilities, I don't know. But you will find, in fiscal year 1994, there is no request from FAA to continue the Airway Science Grants Program. I don't believe that that has turned out to be a cost-effective investment on our part. We do support curriculum development.

Mr. CARR. So you would terminate the grants, basically?

Mr. DEL BALZO. Yes, we would.

Mr. CARR. I encourage you to work with us over the next six months or so. I don't know that we are going to be able to achieve a great deal of success in this particular cycle, but once our main job of putting an appropriations bill out on the floor is over with, I would think it would be worth our time to sit down and think about what it is we fund and don't fund, and develop some criteria to help us decide.

This Committee does not want to be vulnerable to the pleasure of Members, of our colleagues who are being pushed by local entrepreneurial educator types trying to figure out a way to make up the shortfalls in their local community college or university funding through inventive ways of getting into the trust fund. We just don't want to be vulnerable.

We want to establish some criteria that will help us decide whether something is in the nature of enhancing a curriculum or helping a curriculum meet certain standards of excellence; something which does fulfill a need. You might help us by assessing critical vocations in the aviation economy, which would be facing critical shortfalls.

I might say, just by way of explanation, that I am going to be tough on my own area. There was a group of people from my own State that came to my office not too long ago suggesting that I give them high-powered support in an aviation Airway Science Program grant, at first to build buildings and then, to assist in curriculum, all on the grounds that there is a coming pilot shortage and that they wanted to engage very vigorously in flight training.

And they were very proud of the fact that they had made proposals to a number of airlines that had taken them up on the need and the desirability of their supplying this particular service to them. There were a number of domestic airlines, but one of the airlines was British Airways.

You know, I just stopped right at that point and said, "Now, think about this. The United States taxpayer funds pilot training

for British Airways. How do you like that headline?" And they quickly agreed that would not be a good headline to have.

Not that we don't need pilots or not that British Airways is an unworthy airline. It certainly is a very significant global carrier. But I basically told the folks in my own area I could not support what they were selling.

And I guess the reason why I want to tell you that story is that every time there is something that is from our area that we do support that finds its way into a bill, that gets noticed. I suppose we all have a tendency to want to have it noticed. But I know that I am not the only Member of Congress who has had requests from his area who has basically said no, and that story never gets told.

The number of times Members of Congress turn down their own constituents for ill-advised ideas just never gets put on the public record, and the media has a very strong tendency to slant it all the other way.

So I want to work with you. I know that Mr. Wolf does, and the rest of the Members of the Committee want to work to make sure that we develop criteria that will enable us to fend off some of the more ridiculous requests that are made of this committee to have the aviation trust fund finance local projects, even though they may be very meritorious. The fact we wouldn't fund them does not mean they are not meritorious, it is just they are not meritorious for aviation funding.

Mr. DEL BALZO. Mr. Carr, we would be happy to work with you and other committee members and staff. There is a part of the university grant program that we do feel strongly about. It is the university research grant program, that we were given authority a couple of years ago.

We have developed, I believe, the right kind of criteria focusing on areas of research where we have a particular need. That program is administered by our Technical Center. Mr. Safeer, the director, has spent a lot of personal time ensuring the credibility of that criteria and perhaps there is an application of that criteria in this particular area as well.

Mr. CARR. Great. We have a few questions, we will put in the record.

RESEARCH, ENGINEERING AND DEVELOPMENT

RESEARCH PRIORITIES

Mr. CARR. It was interesting to note that in the FAA's annual financial report for fiscal year 1991, which was released in September 1992, in a section titled "Twenty-First Century Aviation," you state that "the FAA is the focal point of research needed to lead air traffic control into the 21st Century."

You then go on to list three programs as examples of that leadership: Synthetic vision research, tilt rotor, and advanced traffic management systems. The first of these, synthetic vision, was canceled by the FAA last year. Tilt rotor has never been aggressively pursued. And ATMS accounts for only about 18 percent of your research budget.

Are these truly the best examples of the products of FAA research?

[The information follows:]

In the FY 1994 Budget Submission, the current emphasis of the R&D programs is on improving safety and increasing system capacity to meet evolving requirements in both the present and future National Airspace System (NAS). Improving system capacity will provide significant long-term fuel savings to the airlines. Representative programs developing improvements to capacity include: Satellite Navigation (GPS), Terminal ATC Automation (TATCA), Oceanic ATC Automation, Traffic Alert and Collision Avoidance System (TCAS), Airport Surface Traffic Automation (ASTA), and Data Link. Programs researching enhancements to improve both aircraft and passenger safety include: Explosive/Weapons Detection, Fire Safety, and Aging Aircraft.

The thrust of all these programs is to provide early benefits to the airline industry by building upon current technology and involving industry early in the development process. Increased cooperation with the military, innovative government/industry partnerships, and expanded use of systems analysis/simulations for investment and implementation decisions will help accelerate AAS ATC functional improvements and lead to a faster deployment of new technology.

Mr. CARR. What is your top research priority and why?

[The information follows:]

FAA's top research priority is increased system capacity (providing fuel savings to the airlines). Over \$68 million of the \$250 million submission is directed towards this priority. The major capacity enhancement programs include: Satellite Navigation (GPS), Terminal ATC Automation, Oceanic ATC Automation, ASTA, and Data Link.

The Satellite Navigation Program responds to user demands for sole means seamless, high accuracy navigation capability down to all weather precision approach landing capability.

Terminal ATC Automation (TATCA) is developing automated tools to provide new ATC functionality to expedite and optimize traffic in the terminal airspace, which will result in increased through-put and reduced delays.

Oceanic ATC Automation will result in reduced operation costs to carriers and will increase oceanic capacity by providing necessary air traffic control communications and procedures (currently seeing results in the Pacific).

The Airport Surface Traffic Automation Program (ASTA) is researching alternatives to prevent accidents caused by runway incursions and to provide traffic management capability to reduce surface delays and increase the efficiency of ground operations.

Data Link development will provide a seamless digital communication system in the oceanic, domestic, en route and terminal areas. This system takes advantage of new ATC technologies, including TATCA, Global Positioning System (GPS), weather services, Pre-Departure Clearance (PDC), and ASTA.

EXPLOSIVES DETECTION

Mr. CARR. Please update as on the status of your efforts to develop new airport security technologies, and tell us what your plans are for the coming year or two.

[The information follows:]

Our highest priority right now is to complete our work on the Certification Criteria for Explosive Detection Systems to screen international checked baggage. The FAA has an EDS certification testing and approval process in place for candidate explosives detection equipment. It now has the laboratory facilities, technical staff and equipment at the FAA Technical Center in New Jersey to conduct the certificate tests.

We are also continuing the development of explosives detection technologies for screening baggage and people as another one of our highest priority R&D efforts. The most mature technologies for screening checked baggage are automated x-ray and computer aided tomography. We are, however, pursuing a number of other bulk detection technologies. Work is continuing to improve vapor and particle detection devices which will be applied to the screening of carry-on baggage and passengers. In addition, we are making significant progress in our complementary high priority efforts in the aircraft and cargo container hardening program.

We recently completed data collection efforts at Seattle-Tacoma with a millimeter wave passenger screening device that we think will be able to detect both metallic and non-metallic weapons, as well as plastic explosives hidden on a passenger.

Finally, construction and equipment installation have been completed for the FAA Technical Center airport security systems project at Baltimore Washington International Airport. Testing of the new integrated passenger security screening checkpoint is scheduled to begin within the next month and will continue into the middle of next year.

VAPOR DETECTION TECHNOLOGY

Mr. CARR. The GAO indicated some concern over how you are pursuing vapor detection technology. In particular, they noted that it may result in a requirement for airports to buy two types of security systems rather than one.

Would you comment on their concerns?

[The information follows:]

We have discussed some of these concerns with representatives of the GAO. In our view, the GAO concerns center around two more fundamental questions. First is the question of the difficulty of scientifically testing the effectiveness of vapor and particle detection devices resulting from, among other things, the lack of a reliable vapor generator for testing and the recent report of the National Academy of Sciences which concluded that it is currently unable to develop an explosive detection system certification testing protocol for these devices.

Second, there is the question of the effectiveness of vapor and particle devices when used for screening checked baggage. The areas of application of these devices that appear to hold the most promise are for screening people and carry-on articles.

Regarding the GAO concerns about the possible requirement to use different kinds of devices, it should be noted that both the Congressional Office of Technology Assessment (OTA) and the National Academy of Sciences (NAS) in recent reports have observed that there is no single technology, or "magic bullet" as OTA phrased it, that is capable of detecting all of the types of explosive materials that must be detected at the level of effectiveness required.

Both OTA and NAS agreed that the near term solution to the problem of detection of explosives hidden on passengers and in baggage appears to be in a combination of technologies and devices that, when operated together, will provide the aggregate level of protection needed. Consequently, the requirement to use multiple devices and/or technologies may be unavoidable unless there is some major unforeseen technological breakthrough in the near term.

CIVIL TILTROTOR

Mr. CARR. I am quite interested in the civil tiltrotor aircraft. The FAA's position has been one of "wait and see what the DOD does." For several years the previous administration recommended killing the tiltrotor program in DOD but Congress has always continued its funding.

I hope, personally, that the tiltrotor doesn't go away, I think it is an important technology that needs continued research and development.

As you look at tiltrotor technology, is this something where the FAA could now say that we ought to move beyond the "wait and see" attitude and see whether we could try to encourage commercial applications?

Mr. DEL BALZO. Mr. Chairman, I think we are doing just that. I think we are trying to strike a fine line between actually investing research and development money and bringing the technology along and, on the other hand, that we encourage and continue to support the development of that technology in the civil applications. I think we are doing that. I think we are, and we have

enough things underway to ensure that the air traffic control system can handle the introduction of the civil tiltrotor.

Mr. Broderick is doing everything he can, I think, to work civil certification issues along with DOD certification, even though there is not a civil sponsor, and that is different for us. We don't normally do that.

You know that Congress directed the establishment of a Civil Tilt Rotor Advisory Committee. That will be chaired by a senior level person from the Office of the Secretary. I have been designated as the FAA member. I believe that we are enthused about the possible application of civil tiltrotor technology, assuming that the technology can be developed to the point where it is reliable, that it is cost effective as it is introduced into the system. We support the introduction, because we see the potential benefits that it can have in the system.

Mr. CARR. I think it is most important that when we think about transportation, we think about transportation from the standpoint of asking ourselves the question of where are people and goods and where do they need to be. We end up with an economy getting somewhat captured by the mode that beats a path to our door professionally.

So you have people who are not advocating transportation, they are advocating rail transportation or they are advocating air transportation. And moving people and goods as efficiently as possible is hampered by that. And of course there are budgets which chase these various modes and it seems to me that we ought to be doing all we can to supply the economy that depends on us with options.

And it seems to me that in that light tiltrotor is so very important. It is clearly a technical option that I think ought to be pursued and I would encourage you to do all you can to make sure to not allow other options to squeeze it out. Make sure that it is given a commitment.

One of the things that I am going to be talking about to my colleagues on appropriations who fund the DOD is the fact that, for civilian or Coast Guard applications, tiltrotor I think could generate a great deal more enthusiasm than perhaps in some of the military applications. I would like to see if we could not get a greater civilian component of the overall R&D effort.

AERONAUTICAL RESEARCH

Mr. CARR. Which also leads me to another question which has to do with where NASA aeronautical research ends and FAA aeronautical research begins, and to what degree the two agencies are overlapping in jurisdiction. Would you comment?

Mr. DEL BALZO. Mr. Chairman, I don't know if it is so much of an overlap as it is a need for us to be sure that what we each do is totally integrated and nonduplicative. I think the work that we are doing with NASA and DOD for that matter puts us closer together than we have been in years. Both Mr. Broderick and Mr. Pozesky and Mr. Burt are deeply involved in all NASA activities.

Mr. Burt is the FAA member on the NASA Advisory Committee. I think we have come a long way in establishing the right kinds of

relationships, given there may be some overlap in mission responsibilities. I would ask Mr. Burt and Mr. Pozesky to build on that.

Mr. BURT. In fact, I will be spending Thursday and Friday of this week in a review of NASA's aeronautic program, and we in the FAA are encouraging them very much to be fully funding their needs, the country's needs, to continue aeronautics research and remember that one of their A's in their name stands for aeronautics and not just the space side of their business.

We do work closely with NASA, particularly at Langley and the Ames Research Centers and we have FAA personnel at those facilities who provide us with a linkage to the work going on there so that we can be aware of it. One of our major thrusts today is in the human factors area.

We have very close ties to the NASA's Ames human factors work, and they are, in turn, assisting us at our Technical Center as we create some complimentary capability so that we can do part of the work that makes sense for us from the FAA's responsibility in our facilities. They will be doing the work that they do for the remainder of the aeronautics world.

I think we have a very close partnership there, and as Mr. Del Balzo mentioned, we are also expanding quite a bit in our partnerships with other government laboratories, the Department of Defense, the Department of Energy, the Department of Commerce, so that we can build a synergy and use the facilities.

There are good opportunities available in defense as they are realizing a drawdown. They have had some capability facilities that used to keep their doors tightly closed and they are wide open now. They have capability, they don't have enough DOD work to do, and we are able to take advantage of some of that.

Mr. CARR. Well, I think we need to examine agency roles and missions here. I don't have any preconceived notions, but we are apparently going to have some government reform, reinventing government. We are going to have congressional reform, which is going to try to realign committee jurisdictions in a more functional way.

Is it unreasonable to think it would make sense to have a national space administration and then move the aeronautic portion of NASA into FAA? Or the other way?

Does it make any sense that the FAA does any aeronautical research but merely is a user and confines its R&D to particularly solving the air traffic control and weather problems?

If you were starting with a blank sheet of paper, Mr. Pozesky, how would you do it? Where should research be?

Mr. POZESKY. I would start with the following concept, Mr. Chairman. I think it is very, very important to have the research and development as close to the operator as you can have it. Every time we do a research and development program hand-in-hand with Mr. Broderick and Mr. Pollard and the operators and Mr. Aquilano, we have a success. Every time we do one that is not hand-in-hand, we don't have a success.

So I would start with, first of all, get your research and development as close to the operators as you can get it, and that would say to me, at least for the part of the operations that FAA does, leave it inside the FAA.

There are other things that would drive that decision, but I could not think of anything more intense. Technology changes rapidly as we have talked about through this whole hearing. We can begin to move some of this technology using commercial off-the-shelf a lot quicker, particularly in the ATC area than we have ever done before, and that to me says keep it close to the operators.

I need to also tell you that we do coordinate with NASA very well. If I had to characterize it, they are doing more of the airframe, engine, and avionics kind of research and development. We are doing more of the weather, ATC and ground based research, although it will not be ground based for much longer. And there are some overlaps.

We do have a coordinating committee. We meet regularly. I am the FAA chairman, but Tony and Bill and others attend. Dr. Harris is there from NASA. We don't have much overlap, uncoordinated overlap. We do have a lot of coordination.

Our relationship is good, getting better. I would like to see at least the ATC and the weather and the capacity and the safety research as it relates to ATC stay very close to the operators, and to me that would say, keep it inside the FAA.

Mr. CARR. But you are also charged with certificating aircraft and the products of all of this. It would seem the same logic would say aeronautical research really ought to come inside the FAA, so that you marry up the certification with R&D knowledge base; is that unreasonable?

Mr. BRODERICK. I think there is a big difference, Mr. Chairman, between developing technologies from which you might choose those that are economically viable and would make the next generation airplane, like the manufacturers do, and staying abreast of those technologies so that when presented for certification, you can intelligently deal with it.

That is the natural fallout that has occurred. There is an awful lot of research that we are familiar with at NASA. NASA right now, for example, is doing an awful lot of work on the high-speed civil transport and we stay generally familiar with that. Before an awful lot of criteria that we have developed for high-speed, high-altitude certification programs, but it is not something that is an essential part of our day-to-day or even very near future certification activity that we actually would be deeply engaged in it.

So they are separable just because of the length of time it takes to take a new concept and move it from conceptual wind tunnel tests at a place like Langley, figuratively, diagonally across the country, to being produced and certified and flight tested for civil use.

Mr. DEL BALZO. It may or may not make sense to go down the path that you are suggesting. But for right now, what we are involved in, you talk about reinventing government, we are about reinventing FAA as we talk about acquisition reform, focusing on cost and schedule and benefits, the need for personnel reform within FAA, staffing standards, investment criteria.

What we need more than anything else right now, for certainly the next two to three years, is stability. We need management stability, we need organizational stability, and we need funding stability. I would not take that need lightly.

FAA USE OF NON-TRADITIONAL R&D PROVIDERS

Mr. CARR. The Committee last year directed the FAA to begin utilizing some organizations which Mr. Pozesky talked about, including DOD laboratories, national laboratories, et cetera, ARPA, formerly DARPA. Apparently, you have done some things in this regard.

Can you share some of the work that has been going on?

Mr. SAFEER. I would like to address that, Mr. Carr. As examples of what we have done now, Wright-Patterson Air Force Base is taking the lead on our aircraft hardening program as part of the security R&D work we are doing.

When they had those excess B-52s out in the desert they had to destroy, we were allowed to come out and use them as test articles for our explosives programming to be able to get signatures of explosives and see what the effects were. So there is one example.

Another example is the work that we are doing at the various laboratories from DOE. Sandia, Los Alamos, where they are working with us on areas such as nondestructive inspection devices, security, R&D.

With the Navy, we are working and have had a long-term arrangement on problems of rust and corrosion on aircraft, since they are in the environment where it occurs most frequently. We are taking advantage of their expertise in looking at how we transfer their technology into the civil fleet to look for rust and corrosion in a nondestructive way.

In addition to that, we have expanded our universities program significantly, once the committee gave us the authority to do university grants. For example, at North Carolina A&T, we are working on logarithms for threatened explosives recognition using neural networks.

Carnegie-Mellon, you may have seen on TV recently, is working on a robotic device for examining aircraft to take away some of the workload from some of the inspectors so that the millionth rivet gets the same attention as the first rivet.

At Embry-Riddle University, we have a close relationship in human factors looking at controller and pilot human factors issues. MIT, Wichita State, Northwestern University, Iowa State University, and Purdue University are other schools in our university program.

On the cooperative research and development agreements, where we essentially form a noncash partnership with industry, we are working with one company, Viva Technology, that has an x-ray explosive detector. They brought it to the technical center and we used our engineers and our bombs to help them prove their algorithms for detection of explosives. This partnership has resulted in, I would say, a factor of ten increase in the effectiveness of that particular machine.

IT&T has their ASR-2000 at the Technical Center, using our test beds for demonstrating it to potential worldwide customers. Here is an American manufacturer using our facilities to demonstrate for foreign customers.

Grumman Aviation is working with us on an acoustic device for a nondestructive inspection for cracks. We have also tapped into

the monies that the companies have set aside for IR&D. We have TRW working to enhance our target generator facilities we use for test and evaluation.

We have talked to IBM, AT&T, IT&T. So more and more we are getting companies involved in using the FAA facilities to improve their products so that they can market them worldwide. Once again, no cash, we just make the facility available as time permits.

MITRE R&D CENTER

Mr. CARR. Since 1990, the FAA has contracted with Mitre Corporation to run a federally funded R&D center for aviation. Our understanding is that Mitre charges FAA \$185,000 per staff year of work and that this amount includes an overhead rate of a whopping 105 percent.

Are these charges not a little excessive?

Mr. DEL BALZO. On the surface, that number would appear to be excessive. The number is high for two reasons. First, Mitre, the FFRDC gives us our air traffic control systems capability. We don't have that capability anywhere else. A capability that has been developed during a 30-year relationship with Mitre. So these are highly talented, qualified people.

But the second reason is the way that charges are levied. All of the Mitre charges are levied against a professional man-year, so that person year that we are paying for includes all administrative staff, and it includes all of the overhead charges. It includes all of the facilities, the operation of the facilities, secretaries, technicians, and they are all against the professional staff.

So the number you are quoting from is the professional staff person-year. But if you were to equate the real Mitre person-year charges against any other contractor that we deal with, you will not find Mitre that out of balance at all. It is just a different kind of a number arrived at in a different kind of way based on their accounting system.

For example, if there is a Mitre person that makes \$100,000 a year, that is what that person gets paid. And they are supported by a Secretary who gets paid, I don't know, \$50,000 a year, \$40,000 a year. We will get charged \$140,000 for the professional year that we are buying.

Mr. CARR. Once the Mitre contract is signed, are they not issued work orders on a sole source basis?

Mr. DEL BALZO. Yes, they are.

Mr. CARR. You don't think there are other qualified contractors who could do it at a lower cost?

Mr. DEL BALZO. To do the work that the FFRDC does, I don't believe so. Not to do the quality of work that they do.

I think we have carved out and we are very particular in the kind of work that we ask Mitre to do. We don't give them work that can be done by anyone else. It is real systems level activities that is being done by Mitre.

I would invite this committee to spend some time with us, maybe half a day, at the Mitre facility so you can see firsthand the kind of work that is going on.

Mr. CARR. Well, I would like to take you up on that opportunity to do that.

LORAN-C

Mr. CARR. Last year, the FAA said that a number of tasks had to be completed before Loran-C can be fully utilized as a nonprecision instrument approach aid.

What is the status of the automatic "blink" feature installation?
[The information follows:]

The design of the automatic blink system (ABS) was completed and two prototype units built. The two prototype units are being tested (April-May 1993) at the U.S. Coast Guard Electric Engineering Center in Wildwood, New Jersey. Six pre-production units for field tests and operator training will be delivered by July 1993. Production of operational units will start in October 1993 and all units will be delivered by February 1994. The U.S. Coast Guard will install and certify performance of the ABS units.

LORAN-C SCHEDULES

Mr. CARR. Has the Loran site evaluation system production and delivery schedule been completed?

[The information follows:]

The Loran site evaluation system production and delivery schedule was completed. The final two units were shipped to FAA regions in mid-April, 1993. Each FAA regional office now has an operational Loran site evaluation system.

LORAN-C CERTIFICATION DATE

Mr. CARR. Last year, FAA said that certification of a Loran-C transmitter suitable for use in nonprecision approaches was expected during 1992. Obviously that timetable has slipped.

When do you expect certification?

[The information follows:]

The FAA is not required to certify Loran-C transmitters. The performance of transmitters is certified by the U.S. Coast Guard as the operator of the Loran-C system. The FAA, however, is waiting to certify Loran-C receivers for use in nonprecision approach procedures in the National Airspace System. Two companies have requested approval of their equipment for nonprecision approach applications. Completion of flight tests is expected during the summer of 1993 with certification October 1993.

Mr. CARR. What future do you envision for Loran-C if GPS comes online late in the 1990s?

[The information follows:]

In May 1989 a report of a study entitled, "GPS/LORAN INTEROPERABILITY FOR AIR NAVIGATION", was submitted to Congress as required by Public Law 100-223, Section 310(b). The report concluded that there is merit in the interoperable use of the two systems and that, together, they have the potential to become a "sole means" of navigation in the National Airspace System (NAS). Neither Loran-C nor GPS, alone, can become a sole means of navigation for the NAS.

TACAN ANTENNAS

Mr. CARR. The Air Force has stated that the earliest date for its aircraft conversion is 2002. Given that the new Tacan antennas are still being evaluated in Atlantic City at this time, what happens to the benefit side of the cost-benefit equation as time slips by?

[The information follows:]

Yes, the benefits only begin when the antennas are fielded. However, we fully expect to start production deliveries in August, 1993, and the cost-benefit analysis indicates a payback period of 2.2 years.

DISCONTINUING PRODUCTION OF TACAN ANTENNAS

Mr. CARR. At what point in time would the FAA consider not going to production on these antennas given the plans of the Defense Department on phase-in of GPS?

[The information follows:]

Unless we receive a formal request from the Department of Defense to discontinue TACAN operation much earlier than projected, production deliveries of TACAN Antennas will start in August, 1993 immediately after the FAA authorization. Based on satisfactory Design Qualification Testing to date, the contractor has been authorized purchase of long lead items to support this production. There are no current or future year dollars approved for the TACAN Program. Funds being spent for the program are FY 92 and prior year dollars.

MEETING REQUIRED SPECIFICATION FOR TACAN ANTENNAS

Mr. CARR. What happens in the event the current Tacan antenna being tested does not meet the specification required? Will you find the equipment deficient or change the specification?

[The information follows:]

The TACAN antenna is being tested for multiple specification parameters: technical, environmental and operational. The final test is an operational evaluation to determine if it serves the intended function. If there are any areas from the testing that deviate from the specification, they will be investigated to determine the operational or logistics impact, any corrective action required, and whether or not the antenna will perform the required TACAN function. Only at that time can we decide if (1) corrective action is required, (2) the antenna is sufficiently capable to meet its performance requirements, or (3) the antenna will not meet requirements and cannot be fielded.

Testing to date indicates that the antenna will be satisfactory.

ATC TRAINING

Mr. WOLF. It is my understanding that training air traffic controllers on the next phase of the Automated Aviation System will require at least 80 hours of training, which FAA is trying to compress into 72 hours.

With that amount of training required for current controllers, are you worried about the level of training which might be required for any PATCO controllers who might be rehired under the administration's "amnesty" plan?

These are controllers whose skills would be understandably rusty after 10 years out of the controller work force.

[The information follows:]

Our estimates of the training time required to transition controllers to the next phase of the Advanced Automation System (AAS) has decreased. It is important to understand that this change does not simply reflect a desire to do more training in less time. Rather, this reduction is evidence of our ongoing effort to improve the effectiveness of controller training. As we get closer to deployment, we are able to evaluate the interaction of real controllers with real equipment. We use this important new information to more effectively target our training efforts. Our training estimates have decreased, and may decrease further, as we focus our efforts on the more critical aspects of controller transition training.

Your concern over the level of AAS training that might be required for PATCO controllers is understandable. However, we have designed an approach that will reduce the impact of transition training for both newly-hired and rehired controllers. This approach will not require controllers to transition to the new system while learning, or relearning, controller skills.

AAS transition training will be given to controllers who are already qualified on the original equipment. We will not put newly-hired or rehired controllers through transition training until they demonstrate the prerequisite control skills. We will accomplish this through careful initial placement. We know when facilities are scheduled for transition, and we can estimate the amount of time it will take for a newly-hired or rehired controller to attain the level of proficiency necessary to enter transition training. Newly-hired or rehired controllers will be placed in those facilities where they will have the opportunity to reach the necessary level of proficiency before transition training begins. By using this approach, we ensure that all controllers, regardless of their employment history, enter transition training at a basic level of proficiency.

As the number of facilities operating with AAS equipment increases, we will start sending newly-hired or rehired controllers through initial training that includes AAS equipment training. These personnel will be assigned to facilities that have already completed transition.

PAY DEMONSTRATION PROJECT

Mr. WOLF. On March 28, 1989, OPM approved a five-year FAA pay demo project to test whether a pay allowance of up to 20 percent would improve FAA's ability to recruit and retain highly qualified safety personnel at "hard-to-staff" facilities in New York, Chicago, San Francisco, and Los Angeles.

Your budget justifications indicate you are terminating this project early and that you feel four years of data is sufficient.

What conclusions have been reached with the data at hand?

[The information follows:]

The formal evaluation of the pay demonstration project is being conducted by an independent contractor under direction of FAA and the Office of Personnel Management. The first evaluation report covering the implementation and initial year of operation of the project was issued in October 1991. A second evaluation report is ongoing, with completion expected by October 1993.

The initial results of the evaluation efforts indicate a generally positive effect on recruitment and retention at the covered facilities. Following is a summary of some of the initial results:

Since implementation, staffing levels increased from 2,129 to 2,352, a net increase of 223 (10.5 percent).

Accessions generally up over previous levels. Total accessions of 1,013 (736 air traffic, 193 airway facilities, 84 flight standards).

Number and quality of applicants/selectees has improved. Experience levels increased to average of 11.3 years per employee, compared to 10.3 years at time of implementation. FPL controllers increased to 910 for covered air traffic facilities, compared to 604 at implementation.

Turnover generally down over previous levels. Total separations of 790 (562 air traffic, 152 airway facilities, 76 flight standards). Average turnover of 56 employees per quarter, compared to 85 per quarter prior to implementation.

Results vary by type of facility and geographic location. Air traffic facilities show the best improvements overall in both recruitment and retention. Airway facilities and flight standards show improvements mostly in retention but also in recruitment, particularly from private industry.

Mr. WOLF. And will you be requesting to make this program permanent?

[The information follows:]

FAA has proposed to end the project effective September 18, 1993. At this time, there are no plans to make the program permanent.

FAA TAKEOVER OF DOD FACILITIES

Mr. WOLF. You are requesting \$4.1 million for fiscal year 1994 for operation and maintenance of certain DOD installation scheduled for closing which FAA must take over because these facilities have air traffic control functions.

Do you have an estimate of future requests?

[The information follows:]

The \$4.1 million in Operations is for training and supply support.

The Operations planning estimates are:

Fiscal year:	Millions
1995.....	\$20.0
1996.....	32.0
1997.....	44.0
1998.....	56.0
1999.....	68.0

Mr. WOLF. What is the total that will be needed to assimilate these facilities from which the DOD will be withdrawing?

[The information follows:]

Total funds of \$282.62M in the F&E. No funds have been projected for the FY-95 list.

Fiscal year:	Millions
1994.....	\$7.65
1995.....	35.73
1996.....	62.34
1997.....	91.96
1998.....	69.34
1999.....	15.6

Mr. WOLF. How many facilities are we talking about in total?

[The information follows:]

From the 1988 and 1991 Closure List we are funding facilities at: Myrtle Beach, SC; Wurtsmith AFB, MI; Bergstrom AFB, TX; Carswell AFB, TX; Williams AFB, AZ; Norton AFB, CA; Castle AFB, CA.

We do not know the final 1993 List or the yet to be developed 1995 List.

Mr. WOLF. Will FAA assume full operational control of these facilities, or is there a plan to encourage local communities to operate them as civilian airports?

[The information follows:]

The Federal Aviation Administration will take over air traffic control operations if the facilities meet Airway Planning Standard #1 (APS-1), or if the facility is used in enroute navigation as part of the National Airspace System.

The FAA will not operate any of the closing bases as an airport. A local community sponsor must do this.

AIRMEN AND AIRCRAFT REGISTRY

Mr. WOLF. I note in your budget justifications that you are requesting \$5.2 million less than in fiscal year 1993 and 27 fewer FTEs for your Aviation Standards program, which includes airmen certification and registration of civil aircraft. As a result of the FAA Drug Enforcement Act of 1988, you prioritized modernization of the Airmen and Aircraft Registry.

What will the cutbacks in your fiscal year 1994 budget request do to your ability to maintain an aggressive registry?

[The information follows:]

Cutbacks in the fiscal year 1994 budget request are linked to planned changes to the renewal cycle for airmen certificates and aircraft registrations. A notice of proposed rulemaking was issued calling for a 3-year renewal cycle. As a result of public comment, we are reconsidering this issue.

No adverse impact upon the agency's ability to maintain an aggressive registry is anticipated; however, a realignment of available resources would be necessary if a renewal cycle of greater frequency than 3 years results from the current review.

CHILD CARE CENTERS

Mr. WOLF. Your fiscal year 1994 budget request includes \$4.8 million for child care centers. Your budget justifications state that in order to attract and retain a highly skilled work force, you need to construct about four child care centers a year at air route traffic control centers.

How many centers does FAA have now?

[The information follows:]

FAA has requested four child care centers in fiscal year 1994 for \$4.8 million.

FAA has two child care centers currently operating at 2 air route traffic control centers (ARTCC): Oakland ARTCC (Fremont, California); Jacksonville ARTCC (Jacksonville, Florida).

FAA has four child care centers to be opened in fiscal year 1993 and fiscal year 1994: Memphis ARTCC (Opening Fall 1993; fiscal year 1992 funding); Kansas City ARTCC (Opening January 1994; fiscal year 1992 funding); Minneapolis ARTCC (Opening 1994; fiscal year 1993 funding); Houston ARTCC (Opening 1994; fiscal year 1993 funding).

FAA has other child care centers in operation at: Washington headquarters (DOT Day Care, Inc.); Great Lakes Region headquarters (Des Plaines, IL); FAA Technical Center (Atlantic City, NJ); Make Monroney Aeronautical Center (Oklahoma City, OK); Central Region headquarters (Kansas City, MO) (GSA administered); GSA Center serving employees of the Seattle Air Route Traffic Control Center (Auburn, WA); GSA Center (Anchorage, AK) (FAA acted as lead agency in establishing first federal child care center in Alaska. Center opened in November 1990 and is currently used primarily by FAA, Bureau of Land Management and Weather Service employees).

The fiscal year 1994 request would enable construction of child care facilities at the following four locations: Dallas/Ft. Worth; Atlanta; 2 other ARTCC's.

Mr. WOLF. How are they operated?

[The information follows:]

FAA child care centers are managed by not-for-profit corporations. The authority of the not-for-profit corporation is vested in the Board of Directors. The Board usually consists of 7 to 11 members who are employees, agency officials, and parents. Tuitions and fundraising efforts by the non-profit corporations pay for the child care centers' staff and operational costs (exclusive of maintenance).

Mr. WOLF. Is there a sliding scale for fees?

[The information follows:]

Yes, there is a sliding scale for fees. DOT Policy as stated in Departmental Personnel Manual Bulletin No. 1000.2 dated February 8, 1991, requires that all DOT child care centers provide some form of tuition subsidy or scholarship program. A sliding scale for fees is a common form of tuition assistance.

Mr. WOLF. Are these centers utilized to capacity?

[The information follows:]

The Oakland ARTCC child care center which opened in December 1991 accommodates 50 infants and children and is operating at capacity.

The Jacksonville ARTCC child care center which opened on April 5, 1993, accommodates 50 infants and children and, as of this date, has an enrollment of 21 infants and children.

Child care centers generally do not reach maximum enrollment until the second year of operation as many parents wait and observe the center's operation before enrolling their children. Additionally, enrollments tend to be lower when centers open in advance of the end of the school year as parents will often wait to transfer children who are enrolled elsewhere. Peak enrollments tend to occur in late May/early June; before the school year begins (August/September); and during the winter holiday break (late December/early January).

As Jacksonville is at nearly 50 percent of its capacity enrollment after only one month of operation, it is anticipated that it will be operating at full capacity well before the end of its first year in operation.

FUTURE REQUIREMENTS FOR CHILD CARE FACILITIES

Mr. WOLF. What is the total projected amount that will be needed to construct enough facilities to meet future needs, given that by the year 2000, women are expected to participate in the work force in the same percentage as men, and 90 percent of these women will be of child-bearing age?

[The information follows:]

	<i>Millions</i>
Appropriated fiscal year 1991 through fiscal year 1993	\$5.2
Requested fiscal year 1994.....	4.8
Future requirement.....	11.5
Total projected cost of ARTCC child care program	21.5

COSTS OF NEW "LIMITED" CONSOLIDATION PLAN

Mr. WOLF. At our hearing last week, Mr. Del Balzo, you announced FAA's plan to proceed with a "limited" consolidation plan for air traffic control facilities. The GAO feels, and it would seem logical, that there is going to be a significant budgetary impact associated with consolidation due to the fact that there will be far more facilities than originally planned.

I know you are planning to submit your report in 30 days, but do you have a rough estimate as to how much "limited" consolidation will add to the \$32.8 billion price tag we already have for NAS modernization through the year 2000?

[The information follows:]

The present estimate for the additional funding required above the NAS modernization baseline through fiscal year 2000 for the limited consolidation alternative is about \$1.2B. The major elements of this increase include the establishment and/or upgrade of Metrolplex Control Facilities (MCF), development and production of a TRACON automation system, and modernization and replacement of stand alone TRACON facilities.

SAFETY INSPECTIONS

Mr. WOLF. The GAO has recommended that FAA develop clear guidance for safety inspectors, particularly with respect to inspections of aging aircraft and targeting inspections to high-risk conditions.

What steps are being taken to implement this recommendation, which seems particularly critical since your budget request retains the current number of safety inspectors at about 2,500?

[The information follows:]

In our response to GAO we indicated some of the actions being taken to address aging aircraft inspections.

The FAA will issue guidance to inspectors clarifying procedures which defines and describes inspection activities conducted on AD's. The new guidance will require inspectors to enter the number of each AD verified, and indicate the complete inspection results including the type of AD's in the Program Tracking and Reporting Subsystem (PTRS) comments section. With this information in PTRS, we can clearly determine which AD's are being verified and use this information for determining aging aircraft inspections.

The National Aviation Safety Inspection Program (NASIP) inspections will continue to include an aging aircraft component. The checklist for aging aircraft structural checks provides specific guidance on conducting hands-on, nose-to-tail examinations of aging aircraft inspection.

New guidance is being issued pertaining to structural spot inspections with emphasis on aging aircraft-related structural spot inspections. The new guidance will require that inspectors include the age of the aircraft and whether the purpose of the operator's inspection was aging aircraft related in the PTRS comments section, and the national use block of the PTRS form will be labeled "AGING." We will then be able to track the inspections to determine the extent to which structural spot inspections are being used to monitor aging aircraft.

We are also working with the U.S. airlines to develop a data base that contains specific data on the structural modification program of AD's. However, the airlines have concerns with releasing competitive sensitive information and whether this information will be subject to FOIA requests. When resolution of this program is complete, we will be able to collect detailed information on AD compliance. This information would then be used to identify problem areas and target inspection resources.

SECURITY

Mr. WOLF. In response to the Pan Am Flight 103 tragedy, the Congress directed the FAA to, among other things, accelerate its research efforts for bomb detection and ways to enhance aircraft survivability.

What progress has been made in this area?

[The information follows:]

The FAA, in response to Congressional direction, has significantly accelerated its research efforts for bomb detection and aircraft survivability. A new R&D office, the Aviation Security Research and Development Service, has been established at the FAA Technical Center in New Jersey. This office of over forty highly skilled personnel has recently moved into a newly constructed Aviation Security laboratory which is now being outfitted with state of the art research apparatus and development equipment. Since the Pan Am 103 tragedy, the FAA has significantly increased R&D funding for these efforts to a current level of \$35 million which provides for industrial, academic and other government agency research investments involving the employment of over 300 full and part time research and development personnel. New aircraft hardening and human factors programs have been added to a revitalized weapons detection program. An enhanced airport security program is operationally testing and evaluating physical security and surveillance technologies.

Significant RDT&E progress has been made by the FAA in this area during the past two years. There are currently several candidate bulk explosive detection systems (EDS) in airport prototype and laboratory model stages of development with some beginning production. They are:

TECHNOLOGY	COMPANY/LOCATION	STATUS
1 Computerized Tomography X-Ray	Invisions, Forest City, CA	Final R&D/Production
2 Dual Energy X-Ray	Vivid, Waltman, MA	Final R&D/Production
3 Back Scatter X-Ray	AS&E, Boston, MA	Airport Prototype
4 Dual Energy View X-Ray	Astrophysics, Long Beach, CA	Airport Prototype
5 Coherent Scatter X-Ray	Scantech, Northvale, NJ	Laboratory Model
6 Pulsed Fast Neutron Analysis	SAIC, San Diego, CA	Laboratory Model

Significant research progress has also been made with a number of other systems that are being developed and produced to detect trace amounts of explosives. They are:

TECHNOLOGY	COMPANY/LOCATION	STATUS
1 Chemiluminescence	Thermedics, Waltham, MA	Baggage/Carry-on screener in production purchased by Germany, Netherlands, and U.K. Ordered by U.S. Portal under development
2 ION Mobility Spectroscopy	Barringer Instruments, Toronto, Canada	Baggage/Carry-on in production purchased by U.S., Canada, & U.K.
3 Electron Capture Detector (ECD)	ION Track Instruments, Wilmington, MA	Portal under development
4 IMS/ECD	CPAD, Ltd Ottawa, Canada	Baggage/Carry-on screener in production, purchased by U.S. and Canada. Portal tested by Transport Canada
5 Surface Acoustic Wave	Amerasia, Los Angeles, CA	Lab model being evaluated
6 IMS	SAIC, La Jolla, CA	Portable Unit delivered to Technical Center for evaluation. 2nd unit to Navy EOD for evaluation

Also the new FAA Aircraft Hardening program has two major initiatives:

The goal of the Unit Load Device (ULD) effort is to determine the feasibility of producing blast resistant, aircraft luggage containers, within the current International Air Transport Association (IATA) specifications, considering factors such as container weight, cost, durability, and other real world application considerations. Three Load Device 3 (LD-3) containers have been fabricated using the Spectra 1000 composition material. These containers have proven to contain explosive quantities over the range of interest. Two additional containers are being fabricated and will be tested shortly.

A grant has been given to a Boeing, Lockheed, and McDonnell Douglas consortium to investigate the vulnerability of commercial aircraft. This group will look at aircraft structures, flight controls, electronic, and hydraulic subsystems, to find ways to improve commercial aircraft vulnerability to explosive detonations.

MAJOR PROBLEM WITH SECURITY RESEARCH

Mr. WOLF. What are the major problems bedeviling this research?

[The information follows:]

The research work in the development of explosive detection devices is progressing well. Through the FAA research and cooperative research and development agreements with industry a number of explosives detection devices are being marketed around the world by United States industry. These technologies are performing quite well but there are further development requirements for the detection of all explosive materials.

The exact materials and quantities are classified. A major research initiative is the integration of these explosive detection devices into an explosive detection system (EDS) to provide a required level of detection, within a given false alarm rate and throughput rate.

The performance requirements mandated by Congress in the Aviation Security Improvement Act of 1990 presents a formidable challenge for the development of EDS equipment. The Act mandates a conservative minimum detection criteria on the types, amounts and configuration of explosives material that is in itself difficult to meet. It further mandates that equipment must be very practical in terms of purchase price, operating costs, size, weight, durability, reliability and so forth in order to meet the needs of air carriers and airports. In addition, it mandates that advanced technology equipment must be ready to field within three years from the date of the Act. Thus, the Act presents a very difficult set of sometimes conflicting requirements.

However, the FAA has a certification process in place in order to test and approve candidate EDS for use in United States Airports. The process of developing, testing, and integrating advanced technology equipment and systems is long, but it is believed by the R&D community that certain technologies are almost mature enough to meet the challenge.

AIRLINE COSTS FOR EXPLOSIVE DETECTION DEVICES

Mr. WOLF. Are there any estimates concerning what new devices might cost the airlines?

[The information follows:]

Rough estimates of cost based on current level of development of various explosive detection devices are as follows:

Enhanced X-ray systems—are on the range of—\$50K to \$75K.

Backscatter X-ray system—175K to 225K.

Automated X-ray such as Vivid—275k to 300K.

Catscan X-ray such as CTX-5000—500k to 600k.

Advanced Vapor Detection systems—75k to 150k.

Vapor Portal Passenger Screening System—200k to 300k.

Millimeter Wave Passenger Screening System—200k to 250k.

Bottle Screeners—10k to 20k.

Actual selling prices will depend upon a number of variables such as the number of units produced and the number of competitors.

Explosives Detection Systems certified under the mandate of the Aviation Security Improvement Act of 1990 may require more than one unit or technology to meet the performance requirements; therefore, the total cost of a system may be significantly higher than the cost of a single device.

HOUSTON HOBBY

Mr. DELAY. I have received correspondence from the tower workers at the control tower at Hobby Airport in Houston. They have suggested that high turnover rates and operational and environmental complexities make Hobby tower one of the most difficult to staff in the country.

At this time last year, I sent the package of information to the FAA asking you to take a look at the situation at Hobby. What I received, however, was rather interesting. You do not argue in

your letter that Houston Hobby is not a complex facility. But you do argue that its current level of operations and complexity are appropriate for level III classification.

On the other hand, the FAA Area Southwest office advocates this reclassification. Quote, "Hobby Tower is authorized at 20 air traffic control specialists and currently has only 11 full-performance levels and six developmentals, three of which are not expected to make full performance level. The overall failure rate of 50 percent coupled with the comparatively low controller grade makes it extremely difficult to adequately staff Hobby Tower."

The letter goes on to say, "We realize that this request to reclassify the facility upward without first meeting established criteria is unusual; however, we believe that the circumstances of this situation merit serious consideration."

Are you familiar with this situation at Hobby Airport?
[The information follows:]

Yes, we are familiar with the request to upgrade Houston Hobby air traffic control tower (ATCT) from a level III limited radar facility to a level IV. You are referencing a staff study that was submitted and reviewed in February 1992. The Houston Tower still does not meet qualifying criteria for the next higher level. We will continue to monitor its activity to see if traffic changes might warrant further consideration.

The Houston ATCT consistently attracts and maintains a very capable workforce. The current authorized staffing level for Houston Hobby is 22 controllers. There are 11 full performance level (FPL) and 11 additional operational controllers that are not yet FPLs. Operational controllers are fully capable of controlling traffic on the sectors they work. As long as we continue to promote controllers out of Houston, the number of developmentals will be high. The failure rate at Houston Hobby is not excessive. In 1992 there were three controllers certified and three failed. However, the previous year there were three certified and only one failed.

Mr. DELAY. What is the failure rate or washout rate at the House Hobby ATC tower?
[The information follows:]

For the period including all of 1991, 1992, and to date in 1993, 21 persons have been in a developmental status at Houston Hobby ATCT. Of those persons, 4 failed the training program (19 percent), 6 have achieved certification (29 percent) and 11 are still in a developmental status (52 percent).

Mr. DELAY. What is the current classification of the tower?
[The information follows:]

Houston Hobby airport traffic control tower is a Level III, limited radar approach control facility. The total airport operations for calendar year 1992 was 240,907.

Mr. DELAY. It seems to me that there is value in retaining capable people. Houston Hobby Tower has a washout rate of, by your calculations, 50 percent. Let's just say, for example, that this tower was upgraded from a level III to a level IV tower.

Would the increase in pay enable that tower to retain capable controllers better than if they remained a level III tower?

[The information follows:]

Certainly an increase in grade would cause some to remain. However, to do so would not be in accordance with the OPM standards. It would also reduce our ability to feed nearby busier facilities such as Intercontinental (IAH) or Fort Worth with controllers from Houston. Currently there are four controllers selected to go to IAH. The normal progression is for controllers to move on to busier and more complex facilities. Therefore, a reasonable turnover rate can be expected.

Mr. DELAY. Is there a cost associated with the high washout rate? Is there not a value in retaining competent controllers as compared to the cost of constant retraining of new controllers?

[The information follows:]

Yes, there is a cost associated with the washout rate; it boils down to the cost/benefit involved in maintaining the high standards and integrity of the Air Traffic system. Our policy is to retain competent persons, including those who demonstrate the aptitude to achieve competency.

PASSENGER FACILITY CHARGES

Mr. DELAY. I have heard allegations about the effects of PFCs at hubs. It appears that airlines with PFCs at their hubs are being forced to eat the PFCs imposed on connecting passengers. As I understand, this is because competing hubs often do not impose the charges. I am concerned about the competitive effects of this problem.

Could you explain it to me?

[The information follows:]

We do not agree that there are competitive advantages and disadvantages among airlines that can be directly attributed to whether any given hub airport collects PFCs. Airport costs constitute approximately 4 percent of airline operating costs. PFCs at any given airport may account for 1 percent of airlines costs. So, to begin with, we are looking at a very small percentage of airline costs. Further, these costs vary significantly when examined airport by airport. For example, Minneapolis has airport costs, excluding their PFC, of \$2.96 per passenger. Detroit, again exclusive of their PFC, is \$3.54. Chicago O'Hare is \$11.72 per passenger, and Chicago has applied to collect PFCs. So the "playing field" of airport costs is not level to begin with.

We expect any disparate impacts which can be attributed to PFCs are negligible and will disappear within a few years. 19 of the 28 large hub airports in the country either have PFCs approved or are in the application process. We fully expect that virtually all airports, both hubs and destination airports, will eventually seek PFC revenue to fund major airport expansion programs.

Mr. DELAY. Regarding the need for PFCs, is the FAA moving toward the implementation of a needs test for PFC approved expenditures?

[The information follows:]

While there is no specific "needs test" defined in the statute, the law does require that public agencies provide justification for their projects, and that these projects be otherwise eligible for Airport Improvement Program funding. The projects must also serve the PFC statute objectives of enhancing or preserving the safety, security, and/or capacity of the national air transportation system, reducing noise impacts, or furnishing opportunities for enhanced competition between or among air carriers. The FAA's careful scrutiny of all of these requirements in reviewing projects for PFC approval assures that projects funded with PFC revenue are justified.

The following numbers provide some demonstration that FAA's review of PFC applications has been more than cursory. Nearly 100 locations are currently authorized to collect PFCs, providing revenue in excess of \$6.4 billion, over an average collection period of 8 years.

The total amount originally requested in these applications was \$14.6 billion. Of this amount, FAA has approved \$6.4 billion; disapproved \$1.8 billion; and deferred decision on \$141 million. Public agencies have withdrawn project totalling \$6.3 million after consultation with the FAA.

AIRLINE INDUSTRY ROLE IN PFC PROJECT APPROVAL

Mr. DELAY. Do you consider it a problem that the affected airlines have only a nominal "consulting" role and no veto power over any proposed project?

[The information follows:]

No. The PFC statute was specifically designed to provide an airport with revenue that could be targeted to projects outside of Majority In Interest contracts and attendant veto power held by the air carriers. However, we do not consider the air carriers role to be nominal. The FAA fully considers any comments received in the Federal Register review process which is required for each PFC application. For example, the FAA conditioned the PFC collection approval for both the Ontario International Airport and Baltimore International Airport terminal projects on those airports re-consulting with the air carriers prior to re-applying for approval to use PFC revenue on those projects. This was in response to the air carriers comments that, in each case, the project scope had not been adequately justified in the PFC application.

Perhaps more important than FAA's consideration of air carrier comments is the public agency's consideration of air carrier comments. While not all airports make significant changes to their applications after consultation with the air carriers, many do. For example, Chicago's applications for O'Hare and Midway were significantly modified after extensive consultation meetings. All disagreements were not ironed out, but most were, and the air carriers expressed their appreciation for the City of Chicago's good faith and cooperation in the consultation process.

TAXES, FEES, INCURRED BY AIRLINES

Mr. DELAY. There are numerous taxes, fees, and other costs incurred by the airlines. Landing fees, custom fees, fuel taxes, passenger facility charges, employment taxes, property taxes, et cetera.

Roughly what is the total in taxes, fees, charges, et cetera, paid by each airlines yearly? For the record, could you supply a criteria and roughly how much each airline is charged?

[The information follows:]

1. The FAA maintains data on aviation excise taxes paid into the Airport and Airway Trust Fund and can provide approximations of the aggregate amount of passenger facility charges (PFC's). This information is not maintained for individual airlines. Moreover, it is important to note that these taxes are technically paid by airline passengers and not the airlines.

2. In Fiscal Year (FY) 1992, aviation excise tax revenues raised from airline passengers for the Trust Fund were as follows (in billions):

Passenger Ticket Tax	\$4.012
Freight Waybill Tax	.260
International Departure Tax	.249

The fourth category of excise taxes paid into Trust Fund, the General Aviation Fuel Taxes, do not impact the commercial airline sector.

3. The FAA estimates that only \$36 million in revenue was raised by airport authorities through PFC's in FY 1992. This low amount reflects the start-up of the program. The FAA estimates that this amount will increase to \$440 million in FY 1993, and \$800 million in FY 1994.

4. The FAA is investigating the availability of the other data items requested. The level of aggregation and comprehensiveness of such data, if available, are unknown at this time.

COSTLY RULES AND REGULATIONS

Mr. DELAY. If you had to prioritize the top three onerous and/or costly rules or regulations, what would they be?

[The information follows:]

The five most costly rules in order of priority—contribution to safety, security and the environment:

Airborne Windshear Detection Equipment (\$405.7 million) Turbulence avoidance during approach phase.

Collision Avoidance System (\$806.3 million) Traffic separation.

Drug Testing of Air Carrier Personnel (\$186 million)—Pre-employment screening and post-accident testing.

Improved Flammability Criteria for Cabin Interior Materials (\$250 million)—Post-crash survivability.

Stage 2 Aircraft phase-out (\$875 million-\$1.4 billion)—Noise.

In addition to these rules already in the books, the FAA has placed high priority in the development of the Alcohol Misuse and Testing Program. With an estimated cost range of \$29.9 M to \$100 M, it provides for pre-employment, random and post-accident alcohol testing of personnel in critical safety positions.

REGULATORY BURDEN

Mr. DELAY. It appears to me that the airlines are facing a large regulatory burden that seems to forever grow and grow.

What would you, the FAA, think of transforming the regulatory process into a pay-as-you-go system?

For example, each time a new regulation is imposed on the industry by Congress or FAA, the cost to the industry would have to be fully calculated. Then to offset the additional cost, a previous regulation with a similar price tag that has outlived its usefulness or is just frankly not worth what it costs would be eliminated. We would essentially have a "budget neutral" regulation and cost system.

Could you comment?

[The information follows:]

Regulations, by their nature, impose a burden on industry and the public. The FAA recognizes this and takes extreme care in its economic analysis to ensure that proposed rules are the least burdensome to industry. Additionally, the Aviation Rulemaking Advisory Committee (ARAC) permits the FAA to obtain early industry input on its rulemaking activities therefore ensuring that the actions contemplated are the least costly. In fact, a consideration in the development of new rules may be that they provide relief from a current burden.

Although a pay-as-you-go regulatory system may appear attractive at first, further examination shows serious limitations. Regulations respond to specific needs. The need may stem from the findings uncovered during an accident investigation, or respond to a Congressional mandate, or address important environmental concerns. In fact, regulations generally improve safety, enhance security, or limit negative environmental impact. Safety and security should not be delayed pending repeal of an existing obsolete regulation. Similarly, outdated rules should be repealed when no longer needed whether a new rule is under consideration or not—a decision which will require a full regulatory effort. The FAA must take prompt and effective action to correct safety hazards. A pay-as-you-go system may hinder the agency's ability to perform critical functions.

The Code of Federal Regulations (CFR) Title 14 contains provisions for petitions for rulemaking. This process is available to industry (and the general public) and offers the most direct means to request changes to obsolete regulations. ARAC is also instrumental in identifying rules needing review. During last year's Presidential rulemaking moratorium, the FAA conducted a thorough review of Title 14 and identified four parts and seven special regulations to be rescinded, and they were.

BTU TAX

Mr. DELAY. The proposed fuel tax will obviously make a huge negative impact on the airlines industry. In fact, ATA has estimated that it will be an additional tax burden of \$1.4 billion to \$2.1 billion when fully implemented. I also understand that virtually all of the airlines have come out in opposition to the proposal except American.

In your opinion, what impact will the BTU tax have on the airline industry?

[The information follows:]

For the first three years of effectiveness, and assuming that the tax only applies to domestic fuels, the effect would be to increase airline expenses as estimated below, using the fully effective rate of eight cents a gallon, and the effectiveness rates of one-third in the first year, then two-thirds, then full effectiveness.

Year beginning—	Million gallons	Rate/ gallons (in cents)	Cost (in millions)
July 1, 1994	12,676	2.64	335
July 1, 1995	12,880	5.33	686
July 1, 1996	13,458	8.00	1.08

PASSENGER WEIGHT ADVISORY CIRCULAR

Mr. DELAY. It is my understanding that the FAA is considering a revised Passenger Weight Advisory Circular. It would require airlines, in calculating payloads, to use average passenger weights of 180 pounds in the summer and 185 pounds in the winter.

Currently, several U.S. carriers use smaller passenger weights of 165 and 170 pounds including carry-on luggage. The increase in passenger weights will force carriers to fly with empty seats and/or less cargo.

What is the FAA's justification for this move?

[The information follows:]

On May 24, 1991, the Air Carrier/General Aviation Maintenance Subcommittee of the Aviation Rulemaking Advisory Committee (ARAC) created a working group to resolve issues with aircraft weight and balance advisory materials. The Weight and Balance Working Group reviewed the existing methods of establishing current standard weights for passengers, carry-on baggage and checked baggage to determine the need to revise AC 120-27B, Aircraft Weight and Balance Control.

The Weight and Balance Working Group proposed a revision to AC 120-27B. The Air Carrier/General Aviation Maintenance Subcommittee reviewed and approved this revision at its regularly scheduled meeting on September 28, 1992.

The new AC 120-27c (draft) lists standard average passenger weights developed for conventional airline passenger groups. The weights should not be arbitrarily adopted for operations with passenger groups that appreciably differ from the basis, or where the mix of male and female passengers is known to be different than a 60%-male/40%-female operation. Special average weights or special ratios may be established for particular operations based on additional surveys.

The standard average passenger weights for conventional airline passenger groups (60%/40%) are 180 pounds for the summer and 185 pounds for the winter.

Standard average passenger weights for regional carriers (60%/40%) are 170 pounds in summer and 175 pounds in the winter; this includes a 10-pound carry-on bag.

All standard average passenger weights for summer and winter operations were developed for conventional airline and regional carriers from actual data gathered by a certain group of operators. The stated passenger weights were derived from an extensive survey, taking into consideration, particular routes and seasonal variations in clothing worn by passengers. The survey was conducted for months and part of the survey process was to weigh the passengers individually (with and without carry on baggage) as they were boarding the aircraft at certain locations.

IMPACT OF FAA ACTIONS ON AIRLINE INDUSTRY

Mr. DELAY. In the current industry crisis, why is the FAA attempting to further hinder the carriers' efforts to stay competitive and return to profitability?

[The information follows:]

The FAA appreciates the plight of the U.S. airline industry and is committed to ensuring that no unnecessary burden is placed on the airlines or the manufacturers of the airplanes they purchase. Nevertheless, the FAA cannot abandon its responsibility under the Federal Aviation Act to establish the minimum standards required in the interest of safety for civil aircraft. Prior to pursuing any rulemaking, all possible alternatives are considered; only those promising to return the necessary bene-

fits for the least cost are proposed for rulemaking action. Each proposed new standard is then carefully reviewed under the guidelines of the Office of Management and Budget to ascertain if the potential benefits would equal or exceed the costs that would be imposed. In addition, existing standards are reviewed periodically to ensure that they are still relevant and necessary. Rulemaking action is taken to remove or modify any that are no longer cost effective.

Today, manufacturing the airplanes used by the airlines is a worldwide business. The FAA is working very closely with foreign airworthiness authorities, manufacturers, airlines and other interested parties to harmonize the standards of this country with those of other countries to the greatest extent possible. Having standards similar to or identical with those of other countries relieves the burden of conducting additional duplicative testing to satisfy the safety standards of each individual country. Although such harmonization is of immediate benefit to the manufacturers, the airlines are the ultimate benefactors because the manufacturer's savings are reflected in the lower prices the airlines pay for their airplanes.

SAFETY-RELATED INCIDENTS DUE TO PASSENGER WEIGHT

Mr. DeLAY. It should not take an accident to prove a point. However, has there ever been a safety-related incident because of passenger weight figures?

[The information follows:]

In December 1985, an Arrow Air DC-8 crashed at Gander, Newfoundland, killing 248 members of the U.S. Army's 101st Airborne Division and the crew of eight. Although the Canadian investigators found that a stall due to wing ice was the most probable cause of this tragic accident, the report stated that inappropriate take-off speed (based on incorrect passenger weight figures) may have compounded the effects of the ice contamination.

This conclusion was based on information obtained during the investigation that the airplane's actual weight was about 14,000 pounds higher than the weight calculated by the flight crew. Most of this difference was attributed to underestimating the weight of the passengers and their baggage.

FLAMMABILITY STANDARDS

Mr. DeLAY. I understand that the FAA is considering issuing an NPRM to mandate a specific date for all U.S. registered aircraft to comply with the latest flammability standards for cabin interiors since aircraft are not being replaced as rapidly as the FAA has anticipated.

First of all, why have the carriers not purchased new aircraft at the rate the FAA had previously calculated?

[The information follows:]

The FAA is not planning to mandate retrofit of interior materials. The principle reason is the high cost for any benefit received. The costs to retrofit the fleet outweigh the potential safety benefits; therefore, mandating a retrofit requirement would not be cost-effective.

INDUSTRY COSTS TO IMPLEMENT FLAMMABILITY STANDARDS

Mr. DeLAY. The GAO has estimated that this concept would cost \$515,000 per narrow body aircraft and up to \$3,500,000 per wide-body aircraft.

Although I am sensitive to the safety issue involved, how can the FAA justify mandating this type of expenditure considering the current industry crisis?

[The information follows:]

The FAA believes that a mandatory retrofit of interior materials is not cost beneficial. The FAA also believes that attrition and the introduction of new airplanes will provide a cost effective upgrading of the fleet. The airlines' rate of acquisition of new airplanes reflects the overall health of the industry.

CURRENT REGULATIONS ON ANTI-FLAMMATORY INTERIORS

Mr. DELAY. What are the current regulations regarding anti-flammatory interiors for airlines?

[The information follows:]

The regulations governing flammability requirements for transport category airplanes are contained in 25.853 and Appendix of the Federal Aviation Regulations. While these are quite lengthy and detailed, they include requirements for heat release, smoke emission, fire resistance and flammability of materials.

GENERAL AVIATION REGISTRATION FEE

Mr. DELAY. It is my understanding that the President is proposing to increase the registration fees for general aviation from a one-time \$5 fee to a nearly \$300 annual fee by 1998. This is a new fee that would be saddled on the back of an industry already beleaguered by insurmountable liability costs.

Will there be any distinction made between aircraft size and type?

[The information follows:]

In the Administration's proposal, there is no distinction made between aircraft size and type.

COLLECTION AND ENFORCEMENT COSTS FOR GA FEES

Mr. DELAY. What are your projections regarding how much the FAA will spend on collecting and enforcing these fees?

[The information follows:]

A final Administration proposal has not yet been formalized with respect to who would collect the fees. One likely option has the Department of the Treasury collect the annual fees for registered aircraft. If this proposal becomes law, we will support the Treasury Department with data listings of registered aircraft, this will involve a minor additional staff cost for file maintenance.

IMPACT OF GA FEES ON AIRCRAFT SALES

Mr. DELAY. When we increased the tax on boats, the boat industry was crushed. The liberals in Congress have admitted this gaffe and have since made several unsuccessfully attempts to lift that tax burden in order to protect the remaining jobs. In much the same way, this 6,000 percent increase for registration is just another way of placing a new tax on the light aircraft industry.

What affect do you think this registration tax will have on new aircraft sales and the competitiveness of the U.S. general aviation manufacturers?

[The information follows:]

We believe that the registration fee will not have a notable impact on new aircraft sales or the competitiveness of the U.S. general aviation manufacturers.

The impact of this fee or tax is to increase annual expenses for general aviation aircraft, not to increase the initial cost. In terms of annual cost, the annual fee would start at \$90 in 1994 and increase by \$60 in the years 1995 through 1997, reaching \$270 in 1997. The full \$270 per aircraft charge per year would involve a small increase in annual cost of operation for individuals. If one is on the low end of the general aviation cost curve, operating a small, single-engine, piston aircraft with an estimated annual operating cost of \$10,000 before this fee, then the fee represents an increase in annual cost of almost three percent. This level of added annual expense would be a negligible increase for commercial operators. If one is on the high end of the annual cost curve, operating a turbojet aircraft with annual operating costs of \$300,000, then the fee represents an increase of one-tenth of one percent.

There could be some effect on the use of smaller piston aircraft, since on the margin, cost increases will affect use of goods and services. However, the example we show of the low cost operator is probably using existing, fully depreciated aircraft. Those in the market for new aircraft are likely to have a higher annual cost than the \$10,000 amount used in the hypothetical example. The effect of an increase in cost of one or two percent is expected to be minimal.

In terms of global competitiveness, a domestic registration fee has no effect on U.S. aircraft manufacturers, since it would not affect demand outside the country, and it would apply to applicable foreign aircraft registered in the U.S.

FRIENDSHIP AIRLINES

Mr. DELAY. As you probably know, Frank Lorenzo is making a tremendous effort to start a short-haul airline based somewhere on the East Coast—hopefully Baltimore. Through the years, Mr. Lorenzo has taken a great deal of heat regarding his business practices.

However, I believe that if each and every one of us here could take a close look at his record, it would show just the opposite of what his most vehement opponents profess that he is.

Mr. Lorenzo is an innovator. He is a man willing to stick his neck out and take a chance. He is a man who is willing to create literally thousands of new jobs at a time when the economy is screaming out for them.

Friendship Airlines has an application submitted at the Department which, if approved, would allow them to begin passenger service.

What is the status of this application?

[The information follows:]

Under the expedited procedures established by our rules, the administrative law judge has until October 12, 1993, to issue an initial or recommended decision in this case, after which this decision will be automatically reviewed by the Department. The Department must reach its final decision on this application no later than 90 days after the issue date of the administrative law judge's decision.

Mr. DELAY. Can you think of any force that would halt progress on this application or Mr. Lorenzo's efforts to create jobs by starting a new airline?

[The information follows:]

Our hearing procedures are designed to ensure fairness. The administrative law judge will weigh all evidence presented before reaching his recommended decision on the Friendship application.

Mr. DELAY. It seems that there are a few small voices making a great deal of noise in opposition to Frank Lorenzo and his latest effort to start an airline.

While I am not going to pick on any particular group, it is interesting to note that the loud voices are coming from a relatively small, high salary, pilots union, and from Members of Congress, virtually all liberal Democrats, who I doubt are experts on Mr. Lorenzo or running an airline.

Out of the roughly 14 million union members in the U.S., some 60,000 are members of the pilots union. The average salary of these members is \$60,000 plus. This union, I might add, is not fighting for more jobs. In fact, I have several letters from former Eastern employees stating they have been "left out in the cold" by the airline pilots union.

These pilots want to work. ALPA, by fighting Frank Lorenzo and Friendship Airlines, is literally fighting against jobs, fighting against out-of-work pilots trying to gain employment.

Why do you think the pilots union is working against new jobs?
[The information follows:]

ALPA's arguments for opposing Friendship's application were summarized in their answer to the application.

Mr. DELAY. With all the noise coming from the liberal Democrats and the pilots union, can Friendship Airlines expect to get a fair hearing on their application?

[The information follows:]

On March 29, 1993, Friendship Airlines filed an application for domestic scheduled passenger authority in Docket 48723.

Answers to the application were received from the Air Line Pilots Association, the Association of Flight Attendants, the International Association of Machinists and Aerospace Workers, and the Transportation Trades Department of the AFL-CIO.

Because these answers, together with other information before us, raised material issues of fact and serious aviation policy issues bearing directly on the public interest the Department instituted the Friendship Airlines, Inc., Fitness Investigation, Docket 48780 (see Order 93-4-50, issued April 29, 1993).

This proceeding has been assigned to Administrative Law Judge Robert L. Barton, Jr.

Judge Barton has set the date for the prehearing conference in this case as May 26, 1993.

NATIONAL WEATHER GRAPHICS PROGRAM

Mr. SABO. What is the status of the current weather graphics program?

[The information follows:]

The current ("interim") weather graphics program supports continued consolidation of Flight Service Stations (FSSs) through seventeen regional contracts with three vendors. The graphics systems procured through these contracts vary in operational capabilities and functionality. A majority of the systems do not meet the 1991 validated Air Traffic requirements, and are maintenance intensive.

Mr. SABO. Does the FAA still plan on implementing a national weather graphics display system?

[The information follows:]

Yes, the FAA plans on implementing, in all automated flight service stations (AFSSs), a national graphics weather system with standardized functional capabilities, training, and maintenance, which will meet all operational requirements. We are presently evaluating procurement strategies, such as lease versus buy, and implementation strategies, such as an integrated system with the FSAS replacement or a stand alone system. Approximately 37 of the existing 58 off-the-shelf interim graphics systems will reach the end of their life expectancy in FY 1994/1995.

Mr. SABO. If so, what are the cost estimates to complete such a national system?

[The information follows:]

The FAA is presently evaluating procurement strategies for a national graphics system, along with attendant cost estimates. We plan to select the most effective and cost efficient option upon conclusion of our examinations. We believe that full and open competition on a national system will obtain the best value for the government.

Mr. SABO. If so, will this system be less expensive and more technologically advanced than the state-of-the-art system available from the private sector?

[The information follows:]

Rather than develop a unique FAA graphics system, we want to use full and open competition to acquire cost effective state-of-the-art graphics technology from the private sector.

FACILITIES WITH INTERIM WEATHER SYSTEMS

Mr. SABO. Of the 61 FAA weather facilities, how many to date have interim systems in place?

[The information follows:]

58 of the 61 Automated Flight Service Stations (AFSSs) are operational, commissioned, and have interim graphics systems in place. The Miami AFSS, destroyed by Hurricane Andrew, and the Honolulu and San Juan AFSSs are planned to be commissioned in FY 1994, and will also have interim graphics systems.

COSTS FOR INTERIM WEATHER SYSTEMS

Mr. SABO. What has the cost to the FAA been for these systems?

[The information follows:]

Through FY 1992, the FAA has obligated approximately \$20.3M to acquire, install, and maintain interim weather graphics systems; and secure pertinent data streams to support those systems.

INTERIM GRAPHIC WEATHER SYSTEMS

Mr. SABO. It is my understanding that an off-the-shelf system is available to replace the existing Automated Flight Service Stations systems. Is there any reason why the current systems could not be updated into the new national system?

[The information follows:]

Existing interim graphic weather display systems provided by current vendors (Kavouras, Weather Service International, and Alden), do not meet all current air traffic requirements. The FAA believes that only through full and open competition, between these and other potential vendors, would we receive the best available technology and services at reasonable cost for both system hardware and data stream (weather products).

REQUIREMENT FOR NEW WEATHER SYSTEMS

Mr. SABO. There is a requirement for three new Automated Flight Service Systems at various places across the country. When these new systems are brought on line, wouldn't it be beneficial to the FAA to bring a "new system" on line at the same time?

[The information follows:]

The FAA does not have a requirement for three additional systems.

Fifty-eight of the required sixty-one systems are operational. The remaining three sites are being addressed as follows:

Miami Automated Flight Service Station (AFSS)—This facility was destroyed by Hurricane Andrew and is in the process of being rebuilt. The interim graphic system received water damage, but after thorough evaluation was determined to be repairable. The equipment was removed from the facility and is in the process of being refurbished.

San Juan AFSS—This facility is planned to be commissioned during February 1994. An interim graphic system is currently operational in the existing flight service station and will be relocated for use in the new facility.

Honolulu AFSS—This facility is planned to be commissioned during April 1994. An interim graphic system is currently operational in the existing flight service station. Although it will require some operational expansion, it will still be cost/beneficial to relocate the system for use in the new facility.

MID-AMERICAN AVIATION RESOURCES CONSORTIUM

Mr. SABO. As you know, the FAA has entered into agreements with five collegiate organizations to test their ability to provide qualified applicants for Air Traffic Control positions. But, does your agency have a strategic plan which incorporates the pre-hire initiatives?

[The information follows:]

At this time, the FAA does not have a strategic plan which incorporates the pre-hire initiative. If empirical data demonstrates that the program is successful during the test period, FAA will consider expanding to other post-secondary educational institutions interested in and capable of replicating any successful "test" screening process and training curriculum. At that time, FAA will develop a strategic plan which will incorporate the pre-hire initiatives with other hiring sources.

Mr. SABO. What is your agency doing to facilitate an expeditious hiring of program graduates?

[The information follows:]

Upon passage of Public Law 102-388 on October 6, 1992, the FAA issued interim implementing instructions. The first group of Collegiate Training Initiative (CTI) graduates entered on duty in the facilities on November 15, 1992. We have continued to hire graduates under the interim instructions as vacancies occur.

We are also currently developing agency guidance governing the centralized processing, referral, and selection of the CTI graduates, as well as other employment issues that affect them as employees in the excepted service.

Mr. SABO. How are you currently processing these candidates? What are the problems?

[The information follows:]

Candidates must pass the OPM written examination and the same medical and security requirements as any other candidate for ATCS positions. The regional office in which the Collegiate Training Initiative (CTI) institution is located makes the noncompetitive examination available and begins processing students prior to graduation.

In the initial implementation of Public Law 102-388, we became aware of the fact that different regions have different ways of accomplishing the same objective. The centralized process will eliminate this kind of problem.

A few CTI graduates have not been employed because they did not meet the medical or security requirements.

Our biggest problem is not the employment processing but the lack of available vacancies.

CONTROLLERS HIRED FROM COLLEGIATE TRAINING PROGRAMS

Mr. SABO. How many MARC pre-hire graduates have been hired by the Agency? How many from other collegiate programs?

[The information follows:]

Only the Mid-America Resource Consortium (MARC), MN, and the Community College of Beaver County (CCBC), PA, have graduated air traffic control CTI students prior to May 1993. The 3 other CTI institutions will produce their first CTI graduates in May 1993.

Total CTI Hires as of May 5, 1993: MARC—113; CCBC—32.

Additionally, 1 CCBC graduate and 3 MARC graduates have been offered employment and are expected to enter on FAA rolls in the next few weeks.

Mr. SABO. How are they doing? Please break down by school.

[The information follows:]

At the current time, graduates have been produced by two of the five educational institutions participating in the Collegiate Training Initiative for Air Traffic Control Specialists. The graduates that have been hired from the Mid-America Aviation Resource Consortium (MARC) and Community College of Beaver County (CCBC) have been reported as performing satisfactorily. Obviously, the number of current hires

does not represent an acceptable data base. During the 5-year evaluation, an increase in the number of employed graduates will support the analyses necessary to determine the effectiveness, efficiency and benefits demonstrated by this training approach.

FUTURE OF GOVERNMENT ATC TRAINING

Mr. SABO. If collegiate training programs, like MARC, can supply the air traffic control candidates, should the government be in the air traffic control training business?

[The information follows:]

The Collegiate Training Initiative (CTI) is an innovative concept presently in its infant stages, and one which has yet to generate enough graduate samples for evaluation purposes. Once this is accomplished, an assessment of the program's potential costs and benefits will be available. To speculate further would be premature.

FUTURE PLANS FOR MARC

Mr. SABO. What are your future plans for the MARC program?

[The information follows:]

The Federal Aviation Administration (FAA) plans to continue to implement the expressed desires of Congress with respect to the operation of the Mid-America Aviation Resource Consortium (MARC). Additional plans for MARC will be contingent upon the results of the 5-year evaluation of the effectiveness of this approach to the delivery of initial air traffic control training.

CURRENT AND FUTURE AIR TRAFFIC CONTROLLER REQUIREMENTS

Mr. SABO. What are your current and future demands for air traffic controllers?

[The information follows:]

The controller work force (CWF) has been growing, but is now stabilized. In fact, the FY 1994 CWF is the same as in FY 1993. Prior to this year, the FAA had been hiring controllers to support planned CWF growth. Since CWF staffing requirements have now stabilized, hiring requirements have been reduced. In FY 1994 the FAA will only be hiring controllers to replace those lost through normal attrition. We anticipate that requirement to be approximately 300 per year.

BREAKDOWN OF REDUCTIONS IN FULL-TIME POSITIONS

Mr. CARR. Please provide a chart breaking down the reductions in full-time positions for fiscal year 1993 and 1994 by budget activity and subactivity.

[The information follows:]

CHANGE IN FULL-TIME PERMANENT POSITIONS

Activity	Fiscal year 1993 estimate ¹	Fiscal year 1994 estimate
Air traffic.....	(684)	(630)
NAS logistics.....	51	(66)
Systems maintenance.....	143	(412)
Leased telecommunications.....	0	0
Aviation regulation and cert.:		
Flight standards.....	(3)	(52)
Certification.....	5	(18)
PD&E.....	1	(2)
Total, AVR.....	3	(72)
Aviation standards:		
Aircraft.....	0	(38)

CHANGE IN FULL-TIME PERMANENT POSITIONS—Continued

Activity	Fiscal year 1993 estimate ¹	Fiscal year 1994 estimate
RS&A	(3)	(10)
Medical	19	(18)
PD&E	2	(2)
Total, AVS	18	(68)
Civil aviation security	0	(34)
NAS design & management	(36)	0
Airports	0	(28)
Direction, staff & support:		
General counsel	0	0
Other DS&SS	252	0
Total, DS&SS	252	0
Human resource management	72	(76)
Headquarters administration:		
HA other	81	0
Safety	0	0
Total, HA	81	0
Total, operations approp	(100)	(1,386)

¹ Reflects realignment of positions in accordance with recent efforts to make technical adjustments to position levels based on FTE's and on-board staff as committed to by FAA during FY 1993 appropriation hearing (House Report, page 556).

SECOND CAREER TRAINING PROGRAM

Mr. CARR. The Congress has for many years carried a provision prohibiting the use of operating funds for new applicants into the second career training program. The President's budget for fiscal year 1994 recommends this provision be continued. Does the FAA have a second career training program at the present time, and if no, do you have plans to revive it?

[The information follows:]

The FAA does not have a second career training program. There are no plans to revive the program.

ALLOCATION OF OPERATING EXPENSES

Mr. CARR. Please provide a chart comparing the allocation of operating expenses as stated in the fiscal year 1993 appropriations conference report to those shown in the most recently quarterly status report.

[The information follows:]

OPERATIONS
FY 1993 DIRECT ALLOCATIONS
(IN THOUSANDS)

OPERATION OF ACTIVITY	FY 1993 APPROP A/	ADJUSTED FY 1993 APPROP B/	CURRENT FINANCIAL PLAN C/
AIR TRAFFIC CONTROL SYSTEM	2,092,000	2,077,650	2,083,815
NAS LOGISTICS SUPPORT	207,764	171,154	170,854
MAINTENANCE OF TRAFFIC CONTROL SYSTEM	844,000	855,350	847,460
TELECOMMUNICATIONS SERVICES	325,406	325,406	323,396
AVIATION REGULATION AND CERTIFICATION	335,695	335,695	333,632
AVIATION STANDARDS	120,000	123,855	121,586
AVIATION SECURITY	69,220	69,220	68,591
NAS DESIGN AND MANAGEMENT	23,355	53,182	55,303
ADMINISTRATION OF AIRPORTS	41,150	41,150	40,906
DIRECTION, STAFF & SUPPORTING SERVICES	151,460	150,972	157,013
HUMAN RESOURCE MANAGEMENT	284,400	283,665	282,712
HEADQUARTERS ADMINISTRATION	46,550	50,701	52,729
ACCOUNTWIDE ADJUSTMENTS	-3,000	0	0
TOTAL	4,538,000	4,538,000	4,538,000

A/ FY 1993 appropriation is \$4,538,000 (P.L. 102-388), as reflected in the Conference Report.

B/ Adjustments were necessary to reflect distribution of Accountwide Adjustments which were undistributed by Congress and to reflect functional realignments. These include transfer of the Air Traffic National Automation Support Division to the Maintenance of Traffic Control Systems new Operational Support Center; transfer from NAS Logistics to Headquarters Administration, NAS Design and Management, and Human Resource Management consistent with the Agency's restructuring; Drug and Alcohol monitoring from Human Resource Management to Aviation Medicine; Environmental from NAS Design and Management to Headquarters Administration; and Aviation Education from Headquarters Administration to Human Resource Management.

C/ The current financial plan, as presented, reflects current operating requirements. The adjustments between this level and the adjusted FY 1993 appropriation level were necessary to fund unanticipated shortfalls and other management priorities identified since submission of the FY 1993 President's request.

DISTRIBUTION OF COST OF LIVING ADJUSTMENT

Mr. CARR. Please provide a breakdown by budget activity of funding requested for the 2.7 percent cost of living adjustment for non-pay items.

[The information follows:]

Non-Pay Inflation Adjustment

[In thousands of dollars]

<i>Activity</i>	<i>Fiscal year 1994 estimate</i>
Air traffic.....	\$3,476
NAS logistics	3,079
Systems maintenance	5,960
Leased telecommunications.....	8,731
Aviation regulation & certification.....	1,445
Aviation standards.....	1,351
Civil aviation security	418
NAS design & management	460
Airports.....	162
Direction, staff & support	1,897
Human resources management.....	3,242
Headquarters administration.....	367
Total, operations appro	\$30,578

NON-DISCRETIONARY ADJUSTMENT FOR DOT AGENCIES

Mr. CARR. It is my understanding that not all DOT agencies were allowed this adjustment. Please explain which agencies were allowed the adjustment and why.

[The information follows:]

The Office of the Secretary has advised FAA that all DOT operating accounts include the 2.7% adjustment based on the latest economic assumptions provided by OMB. However, in many cases, this adjustment is more than offset by the effect of the President's Executive Order to reduce administrative expenses. For the three largest operating accounts in the Department, i.e., FAA Operations, U.S. Coast Guard Operating Expenses, and Federal Highway Administration Limitation on General Operating Expenses, these adjustments are described in the budget justifications provided to the Committee.

INCREASE FOR SUPPLIES AND MATERIALS

Mr. CARR. You are requesting a 3.8 percent increase for supplies and materials even though the overall operation would receive an increase of less than one percent. Why should funding for supplies and materials be rising faster than funding for the appropriation as a whole?

[The information follows:]

Our budget for supplies and materials must provide supply support for approximately 22 new high technology NAS systems which will be deployed in FY 1984. Modest increases in some areas and decreases in other areas allow us this increase to support our supply requirements.

FULL-TIME EQUIVALENT STAFF YEAR REDUCTIONS

Mr. CARR. Please provide a breakdown of the reduction of 434 full time equivalent staff years proposed for fiscal year 1994 by budget activity and subactivity.

[The information follows:]

Reduction in Full Time Equivalent Staff Years

Activity	Fiscal year 1994 estimate
Air Traffic.....	(134)
NAS logistics.....	(27)
Systems maintenance.....	(121)
Leased telecommunications.....	0
Aviation regulation & cert.:	
Flight standards.....	(9)
Certification.....	(5)
PD&E.....	(1)
Total, AVR.....	15
Aviation standards:	
Aircraft.....	(15)
RS&A.....	(4)
Medical.....	(7)
PD&E.....	(1)
Total, AVS.....	(27)
Civil Aviation Security.....	(13)
NAS design & management.....	(12)
Airports.....	(11)
Direction, staff & support:	
General counsel.....	0
Other DS&SS.....	(30)
Total, DS&SS.....	(30)
Human resource management.....	(31)
Headquarters administration:	
HA Other.....	(11)
Safety.....	(2)
Total, HA.....	(13)
Total, operations approp.....	(434)

STAFFING REDUCTIONS PURSUANT TO EXECUTIVE ORDER 12839

Mr. CARR. Please provide a breakdown to the staffing reductions being made in fiscal year 1993 and 1994 pursuant to the executive order of February 1993. This data should be provided by budget activity, with a column showing the percentage of the total reduction represented by each budget activity.

[The information follows:]

In accordance with Executive Order 12839 dated February 10, 1993, below is a table that shows our FTE reductions measured in full-time equivalents.

Activity	Reduction in FTE's		Percent of total fiscal year 1994 reduction by activity
	Fiscal year 1993 estimate ¹	Fiscal year 1994 estimate	
Air traffic.....	(727)	(134)	30.9%
NAS logistics.....	(403)	(27)	6.2%
Systems maintenance.....	(139)	(121)	27.9%
Leased telecommunications.....	0	0	0.0%
Aviation regulation & cert.:			
Flight standards.....	(105)	(9)	2.1%
Certification.....	(56)	(5)	1.2%

Activity	Reduction in FTE's		Percent of total fiscal year 1994 reduction by activity
	Fiscal year 1993 estimate ¹ ²	Fiscal year 1994 estimate	
PD&E	1	(1)	0.2%
Total, AVR	(160)	(15)	3.5%
Aviation standards:			
Aircraft	(10)	(15)	3.5%
RS&A	(56)	(4)	0.9%
Medical	(17)	(7)	1.6%
PD&E	(1)	(1)	0.2%
Total, AVS	(84)	(27)	6.2%
Civil aviation security	(62)	(13)	3.0%
NAS design & management	296	(12)	2.8%
Airports	(9)	(11)	2.5%
Direction, staff & support:			
General counsel	0	0	0.0%
Other DS&SS	(26)	(30)	6.9%
Total, DS&SS	(26)	(30)	6.9%
Human resource management	(64)	(31)	7.1%
Headquarters administration:			
HA other	76	(11)	2.5%
Safety	0	(2)	0.5%
Total, HA	76	(13)	3.0%
Total, operations approp	(1,302)	(434)	100.0%

¹ The FY 1993 President's budget requested 50,658 ceiling FTE's. The FY 1993 column of the FY 1994 request is for 49,356 ceiling FTE's, a reduction of 1,302 FTE's. The FY 1993 appropriated FTE level was 50,325. The FY 1993 column of the FY 1994 request is 49,356, a reduction of 969.

² Reflects impact of transfers Acquisition function and the Operation & Maintenance of the Technical Center from NAS Logistics to NAS Design & Mgmt., Acquisition & Safety Oversight from NAS Logistics to Headquarters Administration; Environmental Policy from NAS Design & Mgmt. to Headquarters Admin.; Human Resource Mgmt. drug program to Aviation Standards; National Automation Field Support Division from Air Traffic to Airway Facilities, Operational Support Service.

REDUCTIONS IN ADMINISTRATIVE EXPENSES

Mr. CARR. President Clinton has also called for reductions in administrative expenses. The justifications indicate that those reductions have been taken against the base funding level for the object class 20 series. A reduction of 3 percent against your total object class 20 base of \$1,089,752,000 would equal a reduction of \$32,693,560 for fiscal year 1994. Is that the amount of your reduction?

[The information follows:]

No, FAA's "administrative reduction" as show in the FY 1994 President's budget is \$35,355,000. Most of FAA's funding in object class 20 series is not administrative expenses but operational expenses. These costs include rent, communications and utilities for operational facilities, job related travel, maintenance and other operational contract support, and operational equipment and supplies. Actual administrative costs in the object class 20 series make up less than \$330,000,000.

In addition FAA has identified \$134,000,000 in other savings within the operations Appropriation. Included are \$44,000,000 related to FTE reductions in FY 1993 and FY 1994, \$20,000,000 for pay demonstration, \$11,000,000 for DUATS, \$15,000,000 for non-recurring lease for teleco, \$17,000,000 for travel and other miscellaneous savings and \$27,000,000 for staff turnover and retirements.

ADMINISTRATIVE REDUCTIONS BY BUDGET ACTIVITY

Mr. CARR. Please provide a chart showing the administrative reductions broken out by budget activity and subactivity.

[The information follows:]

Administrative Reductions

[In thousands of dollars]

Activity	Fiscal year 1994 estimate
Air traffic.....	(\$83)
NAS logistics.....	(4,446)
Systems maintenance.....	(3,271)
Leased telecommunications.....	(10,610)
Aviation regulation & cert.:	
Flight standards.....	(820)
Certification.....	(319)
PD&E.....	(105)
Total, AVR.....	(1,244)
Aviation standards:	
Aircraft.....	(1,570)
RS&A.....	(550)
Medical.....	(1,277)
PD&E.....	(88)
Total, AVS.....	(3,485)
Civil aviation security.....	(14)
NAS design & management.....	(409)
Airports.....	(140)
Direction, staff & support:	
General counsel.....	(32)
Other DS&SS.....	(4,291)
Total, DS&SS.....	(4,323)
Human resource management.....	(6,272)
Headquarters administration:	
HA other.....	(620)
Safety.....	(438)
Total, HA.....	(1,058)
Total, operations approp.....	(\$35,355)

In addition, FAA has identified \$134,000,000 in other savings with the Operations Appropriation. Included are \$44,000,000 related to FTE reductions in FY 1993 and FY 1994, \$20,000,000 for pay demonstration, \$11,000,000 for DUATS, \$15,000,000 for non-recurring lease for teleco, \$17,000,000 for travel and other miscellaneous savings and \$27,000,000 for staff turnover and retirements.

IMPACT OF INFLATION ON ADMINISTRATIVE EXPENSES REDUCTIONS

Mr. CARR. Doesn't the 2.7 percent increase for inflation largely negate the effect of the 3 percent reduction in administrative expenses? I thought the President's goal was to cut administrative expenses. In this budget, you cut those expenses, then restored 90 percent of them with the non-pay inflation adjustment. How are these two budget items consistent?

[The information follows:]

The President's Executive Order 12837 dated February 10, 1993, states that the 3 percent reduction in administrative expenses would be taken from fiscal year 1993 amounts adjusted for inflation.

INFLATION ADJUSTMENT IN "BASELINE" BUDGET

Mr. CARR. Was the inflation adjustment already assumed in the "baseline" budget at the time President Clinton signed executive order 12837 reducing administrative expenses?

[The information follows:]

Yes it was.

ANTICIPATED WAGE ADJUSTMENTS

Mr. CARR. In all your operating accounts, you show increased funding for "anticipated wage adjustments for fiscal year 1994". Please explain what this means.

[The information follows:]

Wage adjustments consist of annualization of FY 1993 within grade and grade-to-grade increases, and FY 1993 pay raise; merit pay, new FY 1994 within grade and grade-to-grade increases, decrease for the annualized cost of FTE savings taken in FY 1993, decrease associated with staff turnover, and increased personnel benefits.

ANTICIPATED WAGE ADJUSTMENTS BY ACTIVITY

Mr. CARR. Please provide a chart breaking down total requested funding for this item by activity and subactivity.

[The information follows:]

Pay Adjustments

[In thousands of dollars]

<i>Activity</i>	<i>FY 1994 estimate</i>
Air Traffic.....	\$37,036
NAS logistics.....	2,226
Systems maintenance.....	2,590
Leased telecommunications.....	0
Aviation Regulation & Cert.:	
Flight standards.....	7,463
Certification.....	2,153
PD&E.....	(72)
Total, AVR.....	9,544
Aviation Standards:	
Aircraft.....	(762)
RS&A.....	498
Medical.....	(684)
PD&E.....	66
Total, AVS.....	(882)
Civil aviation security.....	1,223
NAS design & management.....	1,025
Airports.....	777
Direction, staff & support:	
General counsel.....	384
Other DS&SS.....	1,793
Total, DS&SS.....	2,177
Human Resource Management.....	7,067
Headquarters administration:	
HA other.....	1,111
Safety.....	163
Total, HA.....	1,274
Total, operations approp.....	\$64,057

OPERATIONS—POSITIONS BY OFFICE AND REGION

Mr. CARR. Please update the table showing number of positions assigned to each of your offices and regions similar in format to that shown on pages 458-459 of last year's hearing record.

[The information follows:]

FAA DISTRIBUTION OF FULL TIME PERMANENT POSITIONS
OPERATIONS APPROPRIATION (DIRECT)

OFFICE	FY 1992 ACTUAL	FY 1993 EST.	FY 1994 EST.
ADMINISTRATOR (INCLUDES DEPUTY ADMIN. & COMM. CTR)	51	54	54
Chief Counsel	156	156	156
Assistant Administrator for Civil Rights	15	16	16
Assistant Administrator for Government & Industry Affairs	14	14	14
Assistant Administrator for Information Technology	111	110	110
Assistant Administrator for Public Affairs	30	37	37
Assistant Administrator for Budget & Accounting	3	7	7
Office of Accounting	75	75	75
Office of Budget	54	61	61
Assistant Administrator for Airports	16	16	15
Office of Airport Planning and Programming	37	38	38
Office of Airport Safety and Standards	36	35	35
Assistant Administrator for Civil Aviation Security	28	41	41
Office of Civil Aviation Security Intelligence	34	40	40
Office of Civil Aviation Security Operations	72	79	79
Office of Civil Aviation Security Policy & Planning	38	44	44
Office of Civil Aviation Security Program Management	34	41	41
Assistant Administrator for Human Resource Management	96	84	82
Office of Human Resource Development	40	40	39
Office of Labor and Employee Relations	23	21	21
Office of Personnel	51	52	46
Office of Training and Higher Education	43	42	41
Center for Management Development	10	8	8
Assistant Administrator for Policy, Planning, and International Aviation	15	20	20
Office of Aviation Policy, Plans & Management Analysis	49	73	73
Office of Environment and Energy	33	34	34
Office of International Aviation	23	29	29
Europe, Africa, and Middle East Office	57	57	57
Executive Director for System Operations	9	9	9
Associate Administrator for Air Traffic	7	7	7
Air Traffic Plans and Requirements Service	93	93	92
Office of Air Traffic Program Management	61	63	62
Air Traffic Rules and Procedures Service	81	82	81
Office of Air Traffic System Effectiveness	57	57	56
Office of Air Traffic System Management	200	218	215
Associate Administrator for Aviation Standards	66	68	64
Office of Accident Investigation	20	20	20

Office of Aviation Medicine	197	203	203
Office of Aviation System Standards	962	959	911
Associate Administrator for Airway Facilities	99	113	113
NAS Transition and Implementation Service	78	78	78
Operational Support Service	0	22	22
Systems Maintenance Service	163	118	118
Associate Administrator for Regulation and Certification	15	16	15
Aircraft Certification Service _1/	150	156	154
Flight Standards Service _1/	541	528	505
Office of Rulemaking	30	30	29
Office of System Capacity and Requirements	16	16	16
REGIONAL OFFICES:			
New England	2,164	2,153	2,084
Eastern	5,785	5,609	5,330
Southern	8,755	8,621	8,427
Southwest	5,899	5,942	5,804
Great Lakes	7,157	7,186	6,827
Central	2,926	2,926	2,845
Northwest Mountain	4,631	4,637	4,503
Western-Pacific	6,232	6,262	6,133
Alaskan	1,542	1,532	1,620
Mike Monroney Aeronautical Center	2,071	2,070	2,096
Executive Director for System Development	10	15	15
Associate Administrator for NAS Development	30	29	29
Program Manager for Advanced Automation	6	6	6
Program Director for Automation	55	55	55
Program Director for Communications	25	25	25
Program Director for Navigation and Landing	30	30	30
Program Director for Surveillance	40	40	40
Program Director for Weather and Flight Service Systems	23	23	23
Associate Administrator for System Engineering and Development	14	14	14
Facility System Engineering Service	5	6	6
NAS Program Management Service	10	10	10
NAS System Engineering Service	8	8	8
Operations Research Service	4	4	4
Research and Development Service	6	6	6
Associate Administrator for Contracting & Quality Assurance	116	113	113
FAA Technical Center	621	640	620
Executive Director for Acquisition and Safety Oversight	2	14	14
Associate Administrator for Aviation Safety	13	14	14
Office of Integrated Safety Analysis	46	43	42
Office of Safety Information and Promotion	12	14	15
Office of Acquisition Policy and Oversight	14	14	14
Office of Independent Operational Test and Evaluation Oversight	10	10	10
TOTAL	52,351	52,251	50,865

_1/ Includes positions previously reported under Office of Aviation System Standards.

OPERATIONS—POSITION LEVELS

Mr. CARR. Please update the table showing position levels by operations budget activity, shown on page 463 of last year's hearing record, by providing data for fiscal years 1992 through 1994.

[The information follows:]

FULL-TIME PERMANENT POSITIONS—OPERATIONS APPROPRIATION

Activity	Fiscal year 1993—Congressional			Fiscal year ¹ 1993 Col. of fiscal year 1994 Congressional	Fiscal year 1994 Col. of fiscal year 1994 Congressional
	1992	1993	1993 approved by Congress		
Air Traffic	28,070	27,970	27,970	27,386	26,756
NAS Logistics	1,625	1,625	1,625	1,389	1,323
Systems Maintenance	10,848	10,848	10,848	10,991	10,579
Aviation Regulation & Certification	5,417	5,417	5,417	5,420	5,348
Aviation Standards	1,397	1,397	1,397	1,414	1,346
Civil Aviation Security	1,031	1,031	3,031	1,031	997
NAS Design & Management	301	301	301	529	529
Airports	550	550	550	550	522
Direction, Staff & Support	1,182	1,182	1,182	1,434	1,434
Human Resource Management	1,460	1,460	1,460	1,533	1,457
Headquarters Administration	470	470	470	574	574
Total	52,351	52,251	52,251	52,251	50,865

¹ Reflects realignment of positions in accordance with recent efforts to make technical adjustments to position levels based on FTE's and on-board staff as committed to by FAA during FY 1993 appropriation hearing (House Report, page 556).

POSITIONS AND EMPLOYMENT TABLE

Mr. CARR. Please update the table on positions and employment shown on page 496 of last year's hearing record.

[The information follows:]

Appropriation	Actual employment		Fiscal year 1993 estimate		Fiscal year 1994 estimate	
	Sept. 30, 1992	March 31, 1993	FTP positions	EOY employment	FTP positions	EOY employment
Operations:						
Air Traffic	26,941	26,426	27,386	26,522	26,756	26,107
NAS Logistics	1,464	1,300	1,389	1,311	1,323	1,250
Systems Maintenance	10,108	10,185	10,991	10,458	10,579	10,160
Aviation Regulation & Certification:						
Flight Standards	3,481	3,431	4,349	3,479	4,297	3,441
Aircraft Certification	837	848	1,025	862	1,007	848
Planning, Direction & Evaluation	40	43	46	43	44	41
Aviation Standards:						
Flight Program & Mgmt. of Aircraft	739	726	776	722	738	688
Airmen and Aircraft Registry	141	142	207	164	197	156
Aviation Medicine	291	316	387	313	369	298
Planning, Direction & Evaluation	44	45	44	43	42	41
Civil Aviation Security	852	853	1,031	881	997	852
NAS Design & Management	430	596	529	581	529	554
Airports	507	513	550	506	522	483
Direction, Staff and Support	1,357	1,379	1,434	1,374	1,434	1,310
Human Resource Management	1,492	1,473	1,533	1,485	1,457	1,416
Headquarters Administration	482	500	574	566	574	540
Subtotal, Operations	49,206	48,776	52,251	49,310	50,865	48,185
Facilities & Equipment	2,066	2,156	2,504	2,300	2,504	2,450
Research, Engr. & Development	624	644	645	636	645	636

Appropriation	Actual employment		Fiscal year 1993 estimate		Fiscal year 1994 estimate	
	Sept. 30, 1992	March 31, 1993	FTP positions	EOY employment	FTP positions	EOY employment
Aviation Insurance.....	1	3	2	2	2	2
Total, Direct.....	51,897	51,579	55,402	52,248	54,016	51,273
Total, Reimbursable.....	456	460	551	551	451	451
Total, FAA.....	52,353	52,039	55,953	52,799	54,467	51,724

EMPLOYEE BREAKDOWN BY GS GRADE

Mr. CARR. Please also update the table, similar in format to that on page 497 of last year's hearing record, which shows the number of employees at each GS grade for fiscal years 1992 through 1994. [The information follows:]

OPERATIONS APPROPRIATION

Grade	Fiscal year		
	1992 actual	1993 estimate	1994 estimate
GS/GM-15.....	3,670	3,663	3,560
GS/GM-14.....	12,614	12,491	12,139
GS/GM-13.....	8,494	8,478	8,239
GS-12.....	11,188	11,167	10,852
GS-11.....	5,317	5,307	5,157
GS-10.....	1,374	1,371	1,332
GS-9.....	3,217	3,211	3,120
GS-8.....	162	162	157
GS-7.....	2,510	2,505	2,434
GS-6.....	1,336	1,333	1,295
GS-5.....	1,395	1,393	1,354
GS-4.....	301	300	293
GS-3.....	10	10	10
GS-2.....	4	4	4
Total.....	51,492	51,395	49,946

AVIATION SAFETY JOURNAL

Mr. CARR. How many copies of the Aviation Safety Journal are published, and are any groups assessed a fee to receive it? [The information follows:]

On average, 12,500 copies of the Aviation Safety Journal are published each quarter. The FAA currently does not assess fees, but an action plan being developed calls for assessing subscription fees through the process established by the Government Printing Office.

COST TO PUBLISH THE JOURNAL

Mr. CARR. What does it cost the FAA to publish the Journal? [The information following:]

Currently, publishing the Journal costs an average \$95,000 annually which includes printing and graphics costs.

WORKLOAD INDICATORS

Mr. CARR. Please update the table on workload indicators shown on page 464 of last year's hearing record.
[The information follows:]

WORKLOAD INDICATORS AND INDUSTRY TRENDS

Fiscal year	1991	1992	1993	1994
Foremost Made in March 1989:				
Aviation Fuel Consumption (Billions of Gallons).....	14.0	14.5	14.9	15.3
Revenue Passenger-Miles (Billions) ¹	489.3	517.6	545.0	575.7
General Aviation Hours Flown (Millions)	35.0	35.3	35.9	36.4
IFR Aircraft Handled (Millions)	39.7	40.8	41.6	42.5
Total Operations at Airports with FAA Towers (Millions)	65.8	67.7	69.4	71.0
Instrument Operations Handled by FAA Towers (Millions)	49.5	51.3	52.5	53.8
Forecast Made in March 1990:				
Aviation Fuel Consumption (Billions of Gallons).....	14.2	14.6	15.0	15.4
Revenue Passenger-Miles (Billions) ¹	483.2	509.5	532.7	561.3
General Aviation Hours Flown (Millions)	34.5	35.2	35.5	36.2
IFR Aircraft Handled (Millions)	39.1	40.1	41.0	41.9
Total Operations at Airports with FAA Towers (Millions)	64.5	66.5	67.7	69.4
Instrument Operations Handled by FAA Towers (Millions)	48.0	49.6	50.8	52.2
Forecast Made in February 1991:				
Aviation Fuel Consumption (Billions of Gallons).....	14.0	14.3	14.8	15.2
Revenue Passenger-Miles (Billions) ¹	462.8	488.3	515.5	542.8
General Aviation Hours Flown (Millions)	35.8	36.3	36.9	37.2
IFR Aircraft Handled (Millions)	38.5	39.6	40.6	41.5
Total Operations at Airports with FAA Towers (Millions)	64.6	65.9	67.3	68.9
Instrument Operations Handled by FAA Towers (Millions)	47.8	48.9	50.1	51.4
Forecast Made in February 1992:				
	Actual ²			
Aviation Fuel Consumption (Billions of Gallons).....	12.7	12.9	13.4	13.8
Revenue Passenger-Miles (Billions) ¹	452.8	479.2	506.8	534.4
General Aviation Hours Flown (Millions)	35.2	35.6	36.2	36.7
IFR Aircraft Handled (Millions)	36.4	37.3	38.3	39.4
Total Operations at Airports with FAA Towers (Millions)	61.5	62.4	64.0	65.8
Instrument Operations Handled by FAA Towers (Millions)	45.1	46.1	47.4	48.8
Forecast Made in February 1993:				
	Actual	Actual ²		
Aviation Fuel Consumption (Billions of Gallons).....	12.5	12.5	12.7	13.2
Revenue Passenger-Miles (Billions) ¹	452.8	480.8	501.7	533.1
General Aviation Hours Flown (Millions) ³	30.5	29.9	30.1	30.6
IFR Aircraft Handled (Millions)	36.4	36.7	37.5	38.4
Total Operations at Airports with FAA Towers (Millions)	61.5	61.5	62.5	64.1
Instrument Operations Handled by FAA Towers (Millions)	45.1	45.6	46.4	47.6

¹ Total System, Domestic Plus International Scheduled Revenue Passenger-Miles.

² Preliminary.

³ Revised.

Mr. CARR. Please update the information on FAA's advisory committees shown on pages 466 and 468 of last year's hearing record.
[The information follows:]

ADVISORY COMMITTEES

[FAA has seven operating advisory committees] ¹

Name	Purpose	Fiscal year 1994 estimate
Air Traffic Procedures Advisory.	Reviews air traffic control procedures and practices.....	\$46,000

ADVISORY COMMITTEES—Continued

[FAA has seven operating advisory committees] ¹

Name	Purpose	Fiscal year 1994 estimate
RTCA, Inc. (Utilized as an Advisory Committee).	Advances the art and science of aeronautics through the investigation of all available or potential applications of the telecommunication art, their coordination with allied arts, and the adaption thereof to recognized operational requirements.	\$338,400
Aviation Security Advisory Committee.	Examines all areas of civil aviation security with the aim of providing recommendations for the improvement of methods, equipment, and procedures which will ensure a higher degree of safety for the traveling public.	\$36,000
Aviation Rulemaking Advisory Committee.	Provides advice and recommendations concerning the full-range of the FAA's rulemaking activity with respect to safety-related issues, such as air carrier operations, aircraft certification, airports, and noise.	\$115,000
Research, Engineering, and Development Advisory Committee.	Provides advice on the needs, objectives, plans, and accomplishments concerning aviation research needs in the area of airport capacity, system safety, aircraft safety, aeromedical research, aviation security, future technology, and the National Airspace System.	\$250,000
System Capacity Advisory Committee ² .	Provides advice and recommendations regarding the needs, objectives, plans, approaches, contents, and accomplishments with respect to the system capacity program. The committee reviews aviation needs in system capacity which includes airports, terminal and enroute airspace, technology, automation, and aircraft noise.	
Pilot and Aviation Maintenance Technician Shortage Blue Ribbon Panel ² .	Examines the existing and future supply of pilots and aviation maintenance technicians for civil and military aviation and will make recommendations for alleviating potential shortages.	
Total		\$785,400

¹ Amounts include total cost for advisory committees, not just amounts subject to DOT ceiling for advisory committees.² This committee will terminate in FY 1993.

ADVISORY COMMITTEES

[FAA plans to charter two new committees] ¹

Name	Purpose	Fiscal year 1994 estimate
Civil Tiltrotor Development Advisory Committee.	Public Law 102-581, Airport and Airway Safety, Capacity, Improvement, and Intermodal Transportation Act of 1992, directed the Secretary of Transportation to establish an advisory committee to evaluate the technical feasibility and economic viability of developing civil tiltrotor aircraft and a national system of infrastructure to support the incorporation of tiltrotor aircraft technology into the national transportation system.	\$25,000
Metropolitan New York Aircraft Noise Mitigation Committee.	Public Law 102-143, Department of Transportation and Related Agencies Appropriations Act, 1992, established the Metropolitan New York Aircraft Noise Mitigation Committee to review aircraft noise complaints within the airspace over the States of New York and Connecticut lying within a 55-mile radius of LaGuardia Airport. Public law 102-388, Department of Transportation and Related Agencies Appropriations Act, 1993, expanded the responsibilities and procedures of the committee. The area of coverage was expanded to a 110-mile radius of LaGuardia Airport.	
Total		\$25,000

¹ Amounts include total cost for advisory committees, not just amounts subject to DOT ceiling for advisory committees.

AVIATION ACCIDENT AND FATALITY RATES

Mr. CARR. Please update the tables contained on pages 472-479 of last year's hearing record showing aviation accident and fatality rates.

[The information follows:]

TABLE 1
ACCIDENTS, FATALITIES, AND RATES
AIR CARRIERS AND GENERAL AVIATION
1992 (PRELIMINARY DATA)

	Accidents		Fatalities		Aircraft Hours Flown	Departures	Accident Rates			
							Per 100,000 Aircraft Hours		Per 100,000 Departures	
	Total	Fatal	Total	Aboard			Total	Fatal	Total	Fatal
Air Carriers Operating Under 14 CFR 121										
Scheduled	17	4	33	31	11,600,000	7,630,000	0.147	0.034	0.223	0.052
Nonscheduled	2	0	0	0	630,000	360,000	0.317	0	0.556	0
Air Carriers Operating Under 14 CFR 135										
Scheduled	23	7	21	21	2,180,000	2,880,000	1.055	0.321	0.799	0.243
Nonscheduled	74	24	66	66	2,230,000	n/a	3.32	1.08	n/a	n/a
General Aviation *	1956	408	812	810	27,190,000	n/a	7.19	1.50	n/a	n/a
-----	---	---	---	---						
U.S. Civil Aviation *	2070	443	932	928						
Foreign Registered Aircraft Accidents in the U.S.	18	6	9	8						
Unregistered Aircraft Accidents in the U.S.	17	7	10	10						

Exposure data estimate source: Federal Aviation Administration (FAA).

- * Accidents involving U.S. registered civil aircraft not operated under 14 CFR 121 or 14 CFR 135.
- * Accidents and fatalities in the categories do not necessarily sum to the figures in U.S. Civil Aviation. Differences are due to collisions involving aircraft in different categories.

n/a Data not available.

TABLE 2
ACCIDENTS, FATALITIES, AND RATES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 121
ALL SCHEDULED AND NONSCHEDULED SERVICE
(AIRLINES *)
1982 - 1992

Year	Accidents		Fatalities		Aircraft Miles Flown [†]	Aircraft Hours Flown [†]	Departures [‡]	Accident Rates [§]							
	Total	Fatal	Total	Aboard				Per Million Aircraft Miles		Per 100,000 Aircraft Hours		Per 100,000 Departures			
								Total	Fatal	Total	Fatal	Total	Fatal		
1982	20	5	235	223	2,938,513,000	7,040,325	5,351,133	0.0065	0.0014	0.270	0.057	0.355	0.075		
1983	24	4	15	14	3,069,318,000	7,298,799	5,444,374	0.0078	0.0013	0.329	0.055	0.441	0.073		
1984	17	1	4	4	3,428,063,000	8,165,124	5,898,852	0.0050	0.0003	0.208	0.012	0.288	0.017		
1985	22	7	526	525	3,631,017,000	8,709,894	6,306,759	0.0061	0.0019	0.253	0.080	0.349	0.111		
1986	24	3	8	7	4,017,626,000	9,976,104	7,202,027	0.0057	0.0005	0.231	0.020	0.319	0.028		
1987	36	5	232	230	4,360,521,000	10,644,856	7,601,373	0.0080	0.0009	0.329	0.038	0.460	0.053		
1988	29	3	285	274	4,503,426,000	11,139,519	7,716,061	0.0062	0.0004	0.251	0.018	0.363	0.026		
1989	28	11	278	276	4,605,083,000	11,273,908	7,645,494	0.0061	0.0024	0.248	0.098	0.366	0.144		
1990	26	6	39	12	4,954,328,000	12,149,487	8,127,133	0.0052	0.0012	0.214	0.049	0.320	0.074		
1991	27	4	62 +	49	4,825,268,000	11,893,917	7,858,872	0.0056	0.0008	0.227	0.034	0.344	0.051		
1992 [¶]	19	4	33	31	4,987,000,000	12,230,000	7,990,000	0.0038	0.0008	0.155	0.033	0.238	0.050		

¶ Preliminary data.

* Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.

† Source of estimate: FAA.

+ The fatality total includes the 12 persons killed aboard a Skywest commuter aircraft and the 22 persons killed aboard the USAir airliner when the two aircraft collided.

§ The following suicide/sabotage cases are included in "Accidents" and "Fatalities" but not in "Accident Rates":

Date	Location	Operator	Fatalities	
			Total	Aboard
8/11/82	Honolulu, HI	Pan American	1	1
4/02/86	Near Athens, Greece	Trans World	4	4
12/07/87	San Luis Obispo, CA	Pacific Southwest	43	43
12/21/88	Lockerbie, Scotland	Pan American	270	259

TABLE 3
ACCIDENTS, FATALITIES, AND RATES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 121
ALL SCHEDULED SERVICE
(AIRLINES *)
1982 - 1992

Year								Accident Rates ²					
	Accidents		Fatalities		Aircraft Miles Flown [#]	Aircraft Hours Flown [#]	Departures [#]	Per Million Aircraft Miles		Per 100,000 Aircraft Hours		Per 100,000 Departures	
	Total	Fatal	Total	Aboard				Total	Fatal	Total	Fatal	Total	Fatal
1982	16	4	234	222	2,806,885,000	6,697,770	5,162,346	0.0053	0.0011	0.224	0.045	0.291	0.058
1983	22	4	15	14	2,920,909,000	6,914,969	5,235,262	0.0075	0.0014	0.318	0.058	0.420	0.076
1984	13	1	4	4	3,258,910,000	7,736,037	5,666,076	0.0040	0.0003	0.168	0.013	0.229	0.018
1985	17	4	197	196	3,452,753,000	8,265,332	6,068,893	0.0049	0.0012	0.206	0.048	0.280	0.066
1986	21	2	5	4	3,829,129,000	9,495,158	6,928,103	0.0052	0.0003	0.211	0.011	0.289	0.014
1987	32	4	231	229	4,125,874,000	10,115,653	7,293,025	0.0075	0.0007	0.306	0.030	0.425	0.041
1988	28	3	285	274	4,260,785,000	10,521,052	7,347,575	0.0063	0.0005	0.257	0.019	0.367	0.027
1989	24	8	131	130	4,338,031,000	10,597,922	7,269,094	0.0055	0.0018	0.226	0.075	0.330	0.110
1990	24	6	39	12	4,696,400,000	11,524,726	7,833,487	0.0051	0.0013	0.208	0.052	0.306	0.077
1991	26	4	62 +	49	4,561,784,000	11,253,859	7,553,051	0.0057	0.0009	0.231	0.036	0.344	0.053
1992P	17	4	33	31	4,735,000,000	11,600,000	7,630,000	0.0036	0.0008	0.147	0.034	0.223	0.052

P Preliminary data.

* Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.

Source of estimate: FAA.

+ The fatality total includes the 12 persons killed aboard a Skywest commuter aircraft and the 22 persons killed aboard the USAir airliner when the two aircraft collided.

2 The following suicide/sabotage cases are included in "Accidents" and "Fatalities" but not in "Accident Rates":

Date	Location	Operator	Fatalities	
			Total	Aboard
8/11/82	Honolulu, HI	Pan American	1	1
4/02/86	Near Athens, Greece	Trans World	4	4
12/07/87	San Luis Obispo, CA	Pacific Southwest	43	43
12/21/88	Lockerbie, Scotland	Pan American	270	259

TABLE 4
ACCIDENTS, FATALITIES, AND RATES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 121
ALL NONSCHEDULED SERVICE
(AIRLINES *)
1982 - 1992

								Accident Rates					
Accidents		Fatalities						Per Million Aircraft Miles		Per 100,000 Aircraft Hours		Per 100,000 Departures	
Year	Total	Fatal	Total	Aboard	Aircraft Miles Flown#	Aircraft Hours Flown#	Departures#	Total	Fatal	Total	Fatal	Total	Fatal
1982	4	1	1	1	131,628,000	342,555	188,787	0.0304	0.0076	1.168	0.292	2.119	0.530
1983	2	0	0	0	148,409,000	383,830	209,112	0.0135	0.	0.521	0.	0.956	0.
1984	4	0	0	0	169,153,000	429,087	232,776	0.0236	0.	0.932	0.	1.718	0.
1985	5	3	329	329	178,264,000	444,562	237,866	0.0280	0.0168	1.125	0.675	2.102	1.261
1986	3	1	3	3	188,497,000	480,946	273,924	0.0159	0.0053	0.624	0.208	1.095	0.365
1987	4	1	1	1	234,647,000	529,203	308,348	0.0170	0.0043	0.756	0.189	1.297	0.324
1988	1	0	0	0	242,641,000	618,467	368,486	0.0041	0.	0.162	0.	0.271	0.
1989	4	3	147	146	267,052,000	675,986	376,400	0.0150	0.0112	0.592	0.444	1.063	0.797
1990	2	0	0	0	257,928,000	624,761	293,646	0.0078	0.	0.320	0.	0.681	0.
1991	1	0	0	0	263,484,000	640,058	305,821	0.0038	0.	0.156	0.	0.327	0.
1992P	2	0	0	0	252,000,000	630,000	360,000	0.0079	0.	0.317	0.	0.556	0.

P Preliminary data.

* Includes accidents involving deregulated all cargo air carriers and commercial operators of large aircraft when those accidents occurred during 14 CFR 121 operations.

Source of estimate: FAA.

TABLE 3
ACCIDENTS, FATALITIES, AND RATES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 135
ALL SCHEDULED SERVICE
(COMPUTER AIR CARRIERS *)
1982 - 1992

Year	Accidents		Fatalities		Aircraft Miles Flown [#]	Aircraft Hours Flown [#]	Departures [#]	Accident Rates [#]					
								Per Million Aircraft Miles		Per 100,000 Aircraft Hours		Per 100,000 Departures	
	Total	Fatal	Total	Aboard				Total	Fatal	Total	Fatal	Total	Fatal
1982	26	5	14	14	222,353,000	1,299,748	2,026,691	0.117	0.022	2.000	0.385	1.283	0.247
1983	17	2	11	10	253,372,000	1,510,908	2,328,430	0.067	0.008	1.125	0.132	0.730	0.086
1984	22	7	48	46	291,460,000	1,743,762	2,676,590	0.075	0.024	1.260	0.401	0.822	0.262
1985	21	7	37	36	300,817,000	1,737,106	2,561,463	0.070	0.023	1.209	0.403	0.820	0.273
1986	15	2	4	4	307,393,000	1,724,586	2,798,811	0.049	0.007	0.870	0.116	0.536	0.071
1987	32	10	59	57	350,879,000	1,946,349	2,809,918	0.091	0.028	1.644	0.514	1.139	0.356
1988	19	2	21	21	380,237,000	2,092,689	2,909,005	0.050	0.005	0.908	0.096	0.653	0.069
1989	18	5	31	31	393,619,000	2,240,555	2,818,520	0.046	0.013	0.803	0.223	0.639	0.177
1990	15	3	6	4	450,067,000	2,336,952	3,159,763	0.033	0.007	0.642	0.128	0.475	0.095
1991	22	8	99 *	77	381,390,000	2,171,602	2,718,720	0.058	0.021	1.013	0.368	0.809	0.294
1992P	23	7	21	21	408,000,000	2,180,000	2,880,000	0.056	0.017	1.055	0.321	0.799	0.243

P Preliminary data.

Source of estimate: FAA.

* The fatality total includes the 12 persons killed aboard a Skywest commuter aircraft and the 22 persons killed aboard the USAir airliner when the two aircraft collided.

† Rates are based on all accidents including some involving operators not reporting traffic data to RSPA.

* Includes accidents involving all-cargo air carriers when those accidents occurred during scheduled 14 CFR 135 operations. All-cargo air carriers no longer meet the RSPA definition for 'Commuters'.

TABLE 6
ACCIDENTS, FATALITIES, AND RATES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 135
NONSCHEDULED OPERATIONS
(ON-DEMAND AIR TAXIS)
1982 - 1992

Year	Accidents		Fatalities		Aircraft Hours Flown [#]	Accident Rates Per 100,000 Aircraft Hours	
	Total	Fatal	Total	Aboard		Total	Fatal
1982	132	31	72	72	3,008,000	4.39	1.03
1983	141	27	62	57	2,378,000	5.93	1.14
1984	146	23	52	52	2,843,000	5.14	0.81
1985	154	35	76	75	2,570,000	5.99	1.36
1986	117	31	65	61	2,690,000	4.35	1.15
1987	97	30	65	63	2,657,000	3.65	1.13
1988	101	28	59	55	2,632,000	3.84	1.06
1989	111	25	83	81	3,020,000	3.68	0.83
1990	108	28	49	47	2,241,000	4.82	1.25
1991	88	26	73	69	2,241,076	3.93	1.16
1992P	74	24	66	66	2,230,000	3.32	1.08

P Preliminary data.

[#] Source of estimate: FAA. Hours flown for the years 1982 through 1991 have been revised to reflect the results of FAA's General Aviation Activity and Avionics Non-respondent Survey.

TABLE 7
ACCIDENTS, FATALITIES, AND RATES
U.S. GENERAL AVIATION *
1982 - 1992

Year	Accidents		Fatalities		Aircraft Hours Flown [#]	Accident Rates ^a Per 100,000 Aircraft Hours	
	Total	Fatal	Total	Aboard		Total	Fatal
1982	3233	591	1187	1170	29,640,000	10.90	1.99
1983	3077	556	1069	1062	28,673,000	10.73	1.94
1984	3016	545	1042	1021	29,099,000	10.35	1.87
1985	2738	498	955	944	28,322,000	9.66	1.75
1986	2582	474	967	878	27,073,000	9.54	1.75
1987	2494	447	838	823	26,972,000	9.24	1.65
1988	2386	460	800	792	27,446,000	8.69	1.68
1989	2233	432	768	765	27,920,000	7.98	1.53
1990	2218	445	763	758	28,510,000	7.78	1.56
1991	2143	414	746	740	27,226,000	7.87	1.52
1992P	1956	408	812	810	27,190,000	7.19	1.50

P Preliminary data.

Source of estimate: FAA. Hours flown for the years 1982 through 1991 have been revised to reflect the results of FAA's General Aviation Activity and Avionics Non-respondent Survey.

* U.S. registered civil aircraft not operated under 14 CFR 121 or 14 CFR 135.

a Suicide and sabotage accidents excluded from rates as follows:

Total - 1982 (3), 1983 (1), 1984 (3), 1985 (3), 1987 (1), 1988 (1), 1989 (5)
Fatal - 1984 (2), 1985 (2), 1987 (1), 1989 (4)

TABLE 8
FATAL ACCIDENTS AND FATALITIES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 121
ALL SCHEDULED SERVICE
(AIRLINES)
1992 (PRELIMINARY DATA)

Date	Location	Operator	Service	Aircraft	Fatalities				Total Aboard	Reported Type of Accident
					Psg'r	Crew	Other	Total		
2/15	Swanton, OH	Air Transport International	Cargo	DC-8-63	1	3	0	4	4	Crashed during a missed approach
3/22	Flushing, NY	USAir	Psgr	Fokker F-28-4000	25	2	0	27	51	Crashed during takeoff in wet snow
4/8	Dayton, OH	Trans World	Psgr	DC-9-32	0	0	1	1	28	Mechanic killed by exploding wheel rim
12/8	Flushing, NY	USAir	Psgr	0-737-300LS	0	0	1	1	60	Ground crewman struck by tug during pushback

TABLE 9
FATAL ACCIDENTS AND FATALITIES
U.S. AIR CARRIERS OPERATING UNDER 14 CFR 135
ALL SCHEDULED SERVICE
(COMPUTER AIR CARRIERS)
1992 (PRELIMINARY DATA)

Date	Location	Operator	Service	Aircraft	Fatalities				Total Aboard	Reported Type of Accident
					Psg'r	Crew	Other	Total		
1/3	Gabriels, NY	USAir Express	Psgr	Beechcraft BE-190DC	1	1	0	2	4	Crashed 5 miles from - destination
1/23	Clewiston, FL	Air Sunshine	Psgr	Cessna 402-C	1	1	0	2	2	Crashed during descent
6/7	Mayaguez, Puerto Rico	American Eagle	Psgr	Casa 212	3	2	0	5	5	Crashed during approach
6/8	Ft. McClellan, AL	GP Express Airline	Psgr	Beech C-99	2	1	0	3	6	Crashed during approach
10/26	Saipan, Mariana Islands	Pacific Island Aviation	Psgr	Cessna 310R	2	1	0	3	3	Crashed during initial climb
10/31	Grand Junction, CO	Alpine Air	Psgr	Piper PA-42	2	1	0	3	3	Crashed during descent
11/8	Kiana, AK	Baker Aviation	Psgr	Cessna 402-C	2	1	0	3	3	Crashed into mountain while enroute

TRAVEL COSTS

Mr. CARR. Please update the travel costs that was included on page 482 of last year's hearing record.
[The information follows:]

TRAVEL AND TRANSPORTATION OF THINGS—OPERATIONS APPROPRIATION

[In thousands of dollars]

	Fiscal year—		
	1992 Actual	1993 Estimate	1994 Estimate
Training travel.....	\$38,924	\$34,350	\$31,108
Job performance travel.....	61,524	64,068	67,901
Other travel.....	5,498	8,377	7,446
Transportation of things.....	22,570	18,327	20,088
Total	128,516	125,122	126,543

OPERATIONS—OTHER SERVICES REQUEST

Mr. CARR. Please provide a breakdown of your fiscal year 1994 "other services" request, similar in format to that shown on pages 487 and 488 of last year's hearing record, including the comparable amounts for fiscal years 1992 and 1993.

[The information follows:]

OTHER SERVICES - OPERATIONS APPROPRIATION
(Amounts in Thousands)

	FY 1992	FY 1993	FY 1994
	Actual	Estimate	Estimate
A-76 contractual services	624	675	668
AAC - engineering design and support	2,733	2,636	2,630
Accident prevention program	16	75	75
Aeronautical charting services	17,076	18,441	15,913
Aircraft airworthiness composite and major repairs	630	2,186	1,696
Aircraft rental	6,436	5,331	4,498
Audio visual services	904	1,032	1,018
Automated flight inspection system (AFIS)	682	1,338	1,338
Automation support contract	37,384	39,930	40,964
Aviation safety analysis system (ASAS)	162	167	172
Center weather services - FAA/NOAA	697	702	721
Contract maintenance	8,510	18,310	33,066
Contract physicians	130	300	260
Contractual data processing service	25,754	24,091	23,955
Contractual studies	1,105	8,884	6,989
Contractual time-sharing teleprocessing services	2,262	2,648	2,268
Contractual training services	59,697	56,640	50,969
Effective secretarial services (ESS)	631	578	453
Employee assistance program services	1,537	1,490	1,197
Employee involvement program services	3,004	3,199	4,362
Federal law enforcement training	226	0	300
Flight/nonflight training	6,239	5,942	4,839
Flight standards district office data entry support contract	954	1,966	2,162
Flight training	9,217	8,934	7,180
General working agreement at Transportation Systems Center	5,835	5,416	5,401
Janitorial and guard services	18,923	20,995	21,190
JDL contract for personal services for clerical functions	1,148	1,268	1,168
Leased telecommunications - Transportation Support Center	10,572	11,000	11,000

Maintenance of host computer	3,747	3,747	3,747
Maintenance of integrated communication switching system	14,120	16,300	18,630
Master labor contract Tokyo	187	187	187
Medical clinic service for ARTCC's	220	220	220
Medical examinations	2,132	1,843	1,221
Handbooks	355	806	680
NAS supply support	18,112	18,948	20,948
Not otherwise classified _1/	76,925	76,482	69,743
Office of automation technology & services (OATS)	0	30	110
On-the-job training for flight inspection and procedures	71	0	0
Operation of contract ATC towers	5,046	5,454	5,454
Overhaul of aircraft engines	5,307	5,121	5,350
Physical examinations	81	95	97
Project SAFE - Technical training module development	345	0	0
Random drug testing	4,048	0	0
AVS-60 support (aircraft)	2,765	2,980	2,933
Regional support (aircraft)	4,521	3,179	3,148
Regulatory analysis	0	178	100
Repair and maintenance of ADP equipment	11,679	14,072	14,696
Repair/maintenance administrative, operating, working, and test equipment	2,977	3,096	3,145
Repair, maintenance and inspection of equipment and buildings	18,042	23,886	23,988
Security investigations	5,967	6,088	6,295
Society of automotive engineers	90	95	95
Storage of household effects	2,272	1,910	2,124
Substance abuse program	406	3,529	2,653
Supervisory identification & development program services	1,535	1,488	1,196
Technical Center			
Sector operations support contract	221	233	233
Other engineering support	9,342	9,393	14,991
Traffic management system (CFCF)	1,820	1,826	1,876
USAF training of K-9 teams	741	835	866
Weather observation services	13,885	16,498	16,933
Working capital fund	(21,522)	(22,875)	(24,400)
Total, Other Services	\$430,015	\$458,132	\$465,271

_1/ This line item includes miscellaneous items not identified by a descriptive object class code.

AUTOMATION SUPPORT CONTRACT

Mr. CARR. Last year's data showed estimated funding of \$45 million for an "automation support" contract. Please explain in detail what this contract involves and state the contractor(s) and geographic locations of the work.

[The information follows:]

The \$48 million is not a single contract. It is a consolidated amount for all programs within the Operations Appropriation.

<u>Contractor</u>	<u>Purpose of Contract</u>	<u>Location</u>	(\$000) <u>Amount</u>
Volpe National Transportation Center	LAN support for Aviation Reg. & Cert.	Washington, DC	300
Volpe National Transportation Center	ADP support for RICS, exemption & AFARS automation systems	Boston, MA	200
Aeronautical Center	ADP support for the automated exemption system (AES), RICS, AFARS and database management support	Oklahoma City, OK	20
Transportation Computer Center	OATS training	Washington, DC	122
AT&T	Hardware maintenance	Washington, DC	116
Concept Automation, Inc.	Manufacturing inspection management info. system	Washington, DC	78
Concept Automation, Inc.	Aircraft Certification office subsystem	Washington, DC	130
American Management System	Designees management system	Washington, DC	16
Transportation Systems Center	ADP operations, maintenance, development of grants and planning systems	Boston, MA	1,300
General Services Administration	Technical support	New England, Eastern, Southern, Western Pacific, Northwest Mountain, & Alaskan regions	325
CRM, Inc.	Technical & computer system support for accident database, duty room system, quality assurance system NTSB and FAA safety recommendation system	Washington, DC	316
AT&T	Technical services to support office automation and local area network service	Washington, DC	120
AT&T	Lan support	Washington, DC	60
DISC	Software support for special use airspace management system (SAMS)	Washington, DC	600
Software Systems Associates	Software support for U. S. notice to airmen (NOTAM)	Washington, DC	463
KENROB	Software support for traffic management system	Washington, DC/ Massachusetts	869
SYNETICS	Software and hardware support for air traffic operations management system (ATOMS)	Nation-wide	2,230
Research Mgmt. Consultants, Inc.	- " -	- " -	600
AT&T	- " -	- " -	227
General Analytic	- " -	- " -	247
Computer Sciences Corp.	Software support	Washington, DC	460
IBM	License and software support for enroute HOST computer	Nation-wide	38,426
Abacus	LAN support	Washington, DC	625
			44,817

ADDITIONAL AIR TRAFFIC WORKLOAD

Mr. CARR. Accordingly to your justification, you expect fiscal year 1994 workload growth of approximately 2 to 3 percent in most indicators. However, you are planning to do this with 134 less FTE staff years and no increase in overtime. How will you accommodate the additional work?

[The information follows:]

Of the 134 less FTE's, 100 are in flight service stations (FSS). This reduction can be accomplished by decommissioning 43 FSS's in FY 1993. The remaining reductions are in the other than controller work force (OTCWF) in the enroute and terminal option. The controller work force (CWF) will remain constant in FY 1994.

AIR TRAFFIC CONTROLLER PRODUCTIVITY

Mr. CARR. Although we have been told for many years that air traffic controller productivity is being raised, data submitted for the record last year (p. 275-280) indicates that productivity growth has been flat or declining. To the extent that you believe the additional work in fiscal year 1994 can be handled through productivity increases, please explain in detail how this will be achieved.

[The information follows:]

CWF productivity will increase in FY94 due to an overall increased level of experience in the work force, a continuing increase in the FPL percentage, and the attendant decrease in the requirement to provide On-the-Job training to developmentals.

DECREASE IN AIR TRAFFIC DEVELOPMENTAL PIPELINE

Mr. CARR. On page 24, you show that the number of controllers classified as "developmental pipeline" is dropping, from 968 in FY 1990 to a planned level of 57 in fiscal year 1994. What accounts for such a large drop?

[The information follows:]

The controller work force (CWF) has been growing, but is now stabilized. The FY 1994 CWF is the same as in FY 1993. Prior to this year, the FAA has been hiring developmental controllers to support planned CWF growth. The normal progression for a Developmental Controller is to become an Operational Controller after the developmental period. Since CWF staffing requirements have now stabilized, hiring requirements have been reduced resulting in a smaller number of developmental pipeline controllers.

CONTROLLER WORK FORCE RETIREMENTS

Mr. CARR. Last year (p. 290), you estimated that between 240 and 280 members of the controller work force would retire each year for the coming few years. Your current budget projects 418 in calendar year 1993 and 412 in calendar year 1994. Why are your current estimates so much higher than the number you submitted last year?

[The information follows:]

The 240-280 figure given last year in testimony referred to only the controller work force (CWF), whereas the estimate of 412 and 418 in the budget submission refers to both CWF and other than controller work force (OTCWF) in the terminal and enroute options.

ASSUMPTION FOR CONTROLLER WORK FORCE RETIREMENTS

Mr. CARR. You are assuming that 20 percent of those eligible will retire in calendar year 1993 and 1994. How realistic is this assumption, since your actual data for 1991 and 1992 indicate that only 7 to 9 percent of the eligibles retires in those years?

[The information follows:]

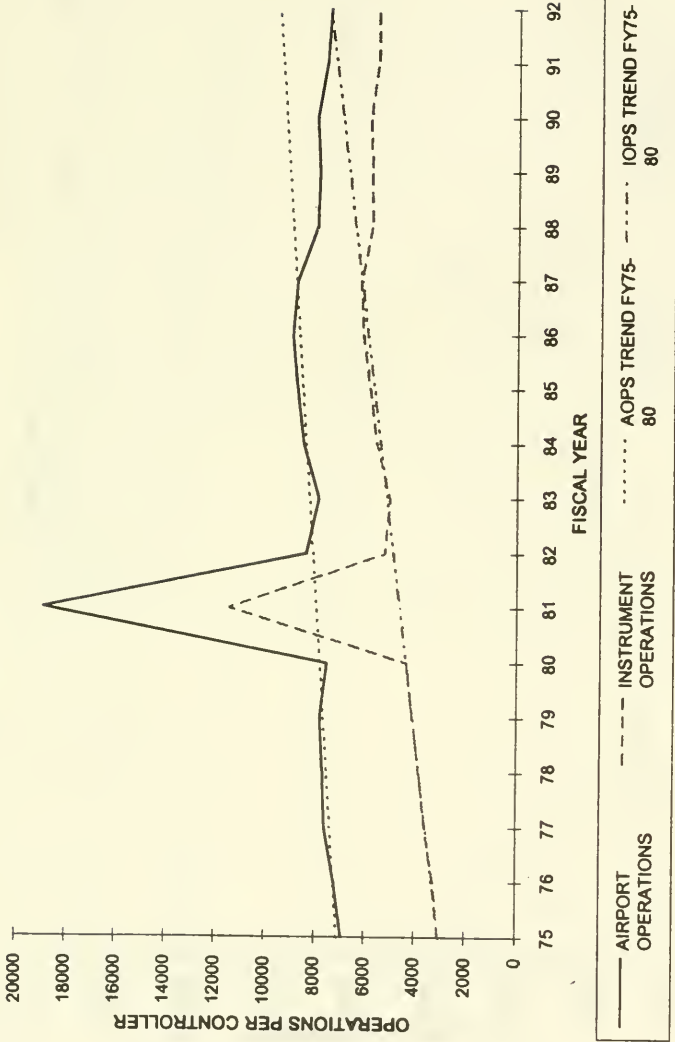
The long term history of retirements indicates that 20 percent of those eligible will retire. In FY 1994 we will be watching very carefully to see if the lower retirement rates in 1991 and 1992 were the start of a trend, or an aberration. When predicting retirement rates, it is necessary to be very flexible, since it is a variable that the agency has no control over.

PERFORMANCE MEASURES

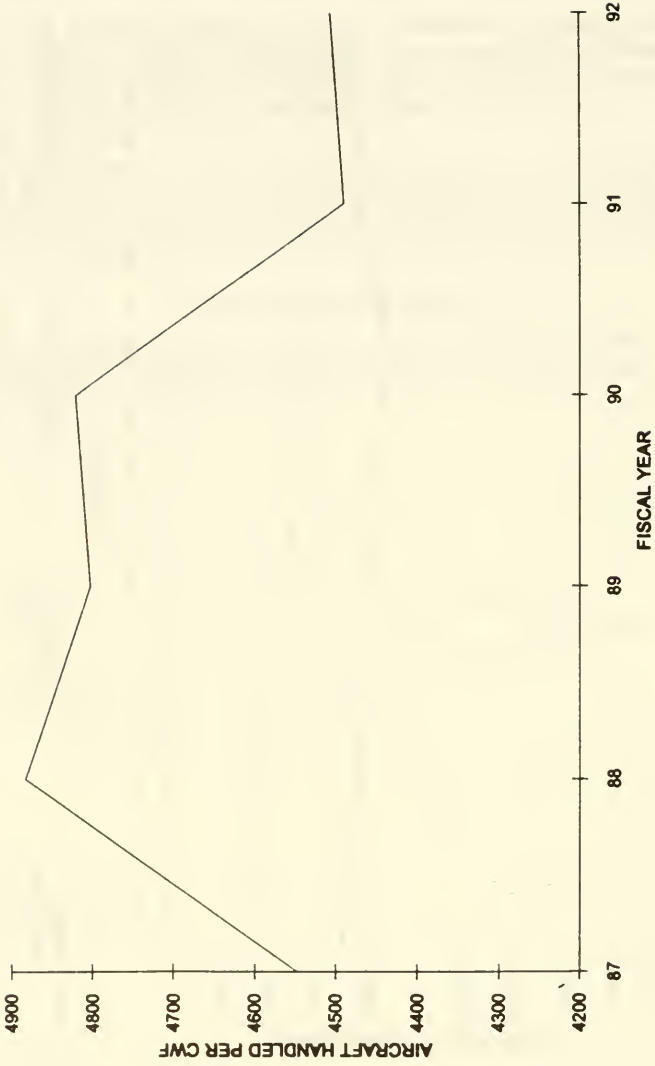
Mr. CARR. Please update for the record the performance measures contained on pages 274-280 of last year's hearing record.

[The information follows:]

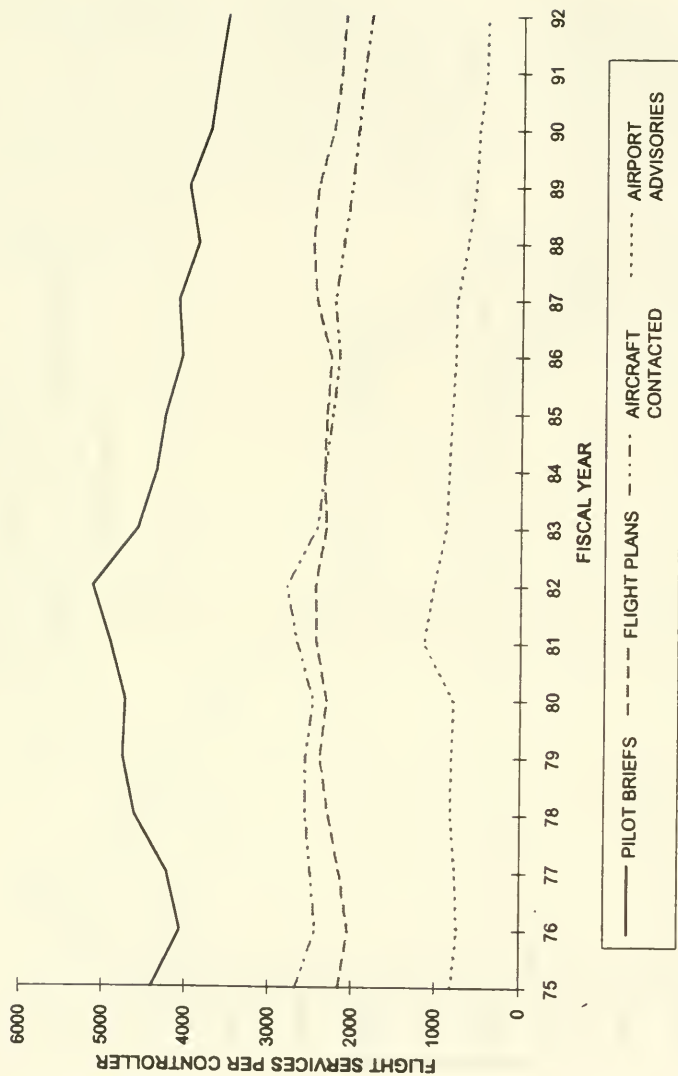
PRODUCTIVITY PER CONTROLLER (TERMINAL)



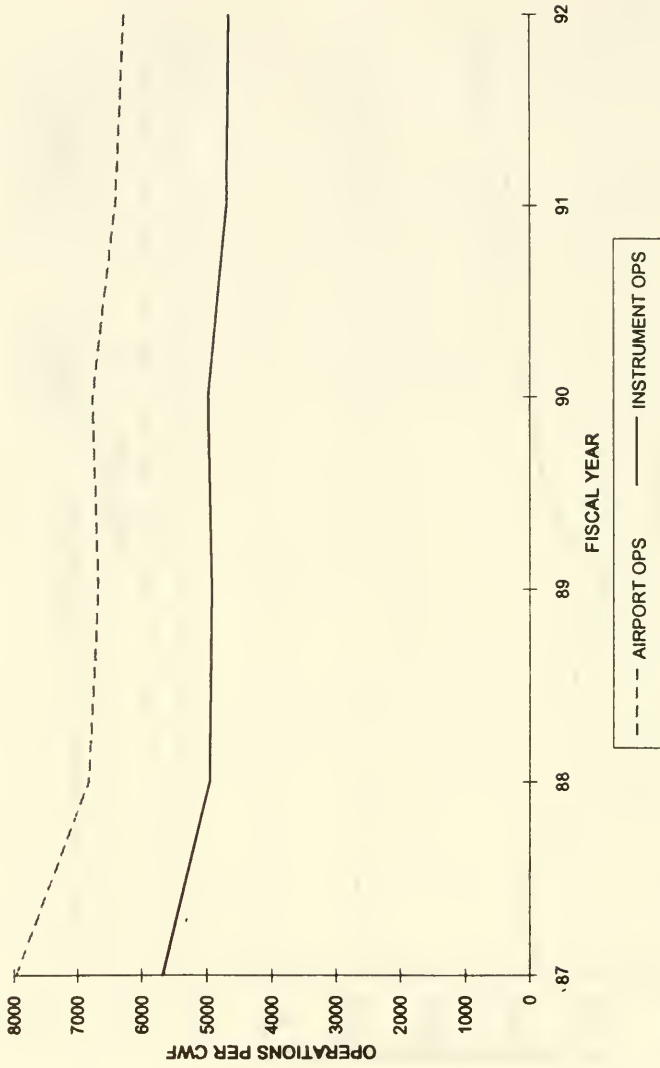
PRODUCTIVITY PER CWF (CENTERS)



PRODUCTIVITY PER CONTROLLER (STATIONS)

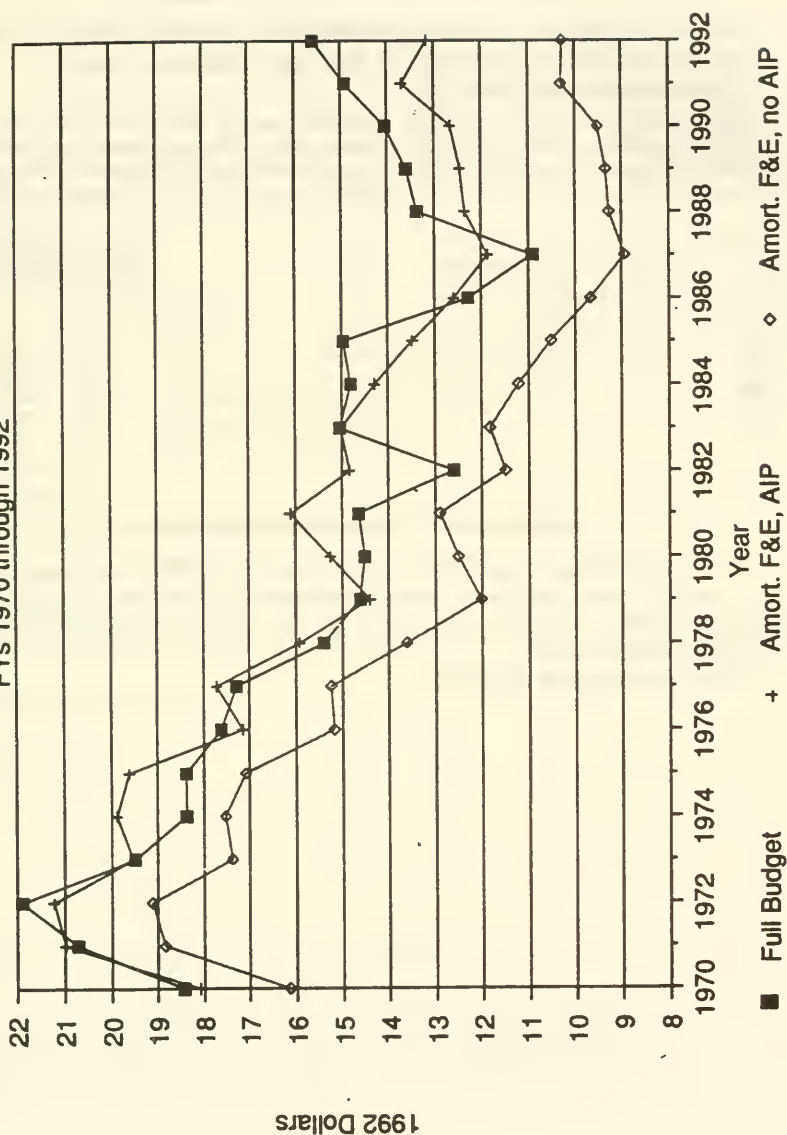


PRODUCTIVITY PER CWF (TERMINALS)



FAA Cost per Passenger Moved

FYs 1970 through 1992



CONTROLLER WORK FORCE RETIREMENTS

Mr. CARR. Please update the chart on controller work force retirements shown on page 291 of last year's hearing record.

[The information follows:]

Historically, less than 1 percent of the CWF usually resigns and only 23 percent of those eligible actually retire in a given year. However, based on a decline in actual retirements the statistics below are calculated on 20 percent of those eligible actually retiring in a given year. Following is a current CWF retirement profile:

Calendar year—	Number becoming eligible	Anticipated retirements in	Retirement eligible at EOY
1992.....	N/A	N/A	872
1993.....	292	233	931
1994.....	270	240	961
1995.....	372	267	1066
1996.....	230	259	1037
1997.....	187	245	979

CONTROLLER WORK FORCE EMPLOYMENT

Mr. CARR. Please update for the record the table showing controller work force end of year employment for fiscal years 1990 through 1994, similar in format to the data on page 341 of last year's hearing record.

[The information follows:]

CONTROLLER WORK FORCE

(End of Year Employment)

	FISCAL YEAR 1990	FISCAL YEAR 1991	FISCAL YEAR 1992	FISCAL YEAR 1993 (Estimate)	FISCAL YEAR 1994 (Estimate)
CENTERS:					
FPL Controllers	4,598	4,822	5,181	5312	5,392
Other Controllers	1,411	1,536	1,433	1678	1,703
First-line Supervisors	817	856	866	863	863
TOTAL OPERATIONAL CONTROLLERS	6,826	7,214	7,480	7,853	7,958
Developmental Pipeline	968	891	674	252	57
CENTER CONTROLLER WORK FORCE	7,794	8,105	8,154	8,105	8,015
TOWERS:					
FPL Controllers	6,226	6,310	6,813	6730	6,835
Other Controllers	1,196	1,364	1,110	1383	1,400
First-line Supervisors	1,387	1,453	1,508	1475	1,475
TOTAL OPERATIONAL CONTROLLERS	8,809	9,127	9,431	9,588	9,710
Developmental Pipeline	623	489	397	178	146
TOWER CONTROLLER WORK FORCE	9,432	9,616	9,828	9,766	9,856
CENTERS/TOWERS COMBINED:					
FPL Controllers	10,824	11,132	11,994	12,042	12,111
Other Controllers	2,607	2,900	2,543	3,061	3,219
First-line Supervisors	2,204	2,309	2,374	2,338	2,338
TOTAL OPERATIONAL CONTROLLERS	15,635	16,341	16,911	17,441	17,668
Developmental Pipeline	1,591	1,380	1,071	430	203
TOTAL CONTROLLER WORK FORCE	17,226	17,721	17,982	17,871	17,871

NOTE: This chart reflects the redefinition of CWF beginning October 1, 1987 (FY-88). End-of-year employment data for FY 1987 has been previously been stated for the record.

The new definition for CWF includes first-line supervisors and traffic management coordinators, and excludes air traffic assistants (ATA's) and FAA Academy trainees. The category "Other Controllers" includes those controllers at FPL grade but not fully checked out, and a developmental controller who is certified on two or more positions at operation. The term "Developmental pipeline" includes those individuals who have successfully completed FAA Academy initial training and are assigned to their first facility, but not yet certified on at least two positions.

AIR TRAFFIC FORECAST

Mr. CARR. Please provide a summary of the most recent air traffic forecast for both domestic and international air travel.

[The information follows:]

Domestic air carrier enplanements are expected to increase by 1.8 percent in 1993, but average annual growth will rise to 3.5 percent over the coming decade, causing domestic enplanements to reach 646.7 million by 2004. International passenger enplanements will grow at an annual average growth of approximately 6.6 percent to 91.3 million in 2004. Additional information is provided in the attached table.

AVIATION ACTIVITY FORECASTS FISCAL YEARS 1993 - 2004

AVIATION ACTIVITY	HISTORICAL			FORECAST			PERCENT AVERAGE ANNUAL GROWTH				
	1985	1991	1992	1993	1994	2004	85-92	91-92	92-93	93-94	92-04
AIR CARRIERS											
Enplanements (Millions)											
Domestic	350.4	413.3	428.8	436.7	458.6	646.7	2.9	3.8	1.8	5.0	3.5
International	24.3	39.7	42.6	46.5	50.1	91.3	8.4	7.1	2.3	7.7	6.6
Atlantic	11.4	12.2	14.8	16.0	16.9	27.8	3.8	21.0	7.9	5.6	5.4
Latin America	7.9	14.7	13.6	15.3	16.5	30.5	8.1	(7.7)	12.8	7.8	7.0
Pacific	5.0	12.8	14.2	15.2	16.7	33.0	16.1	10.7	7.4	9.9	7.3
System	374.6	453.1	471.4	483.2	508.7	738.0	3.3	4.0	2.5	5.3	3.8
RTMs (Billions)											
Domestic	265.8	333.6	346.3	355.5	375.1	548.4	3.9	3.8	2.6	5.5	3.9
International	65.4	113.3	128.3	139.2	150.3	276.2	10.4	13.0	8.5	8.0	6.6
Atlantic	36.1	47.1	57.8	62.3	66.1	109.9	7.0	22.5	7.9	6.1	5.5
Latin America	9.7	18.3	17.1	19.5	21.1	39.9	8.4	(6.5)	13.9	8.2	7.3
Pacific	18.6	48.0	53.4	57.4	63.1	126.4	16.3	11.2	7.5	9.9	7.4
System	330.2	447.1	474.6	494.7	525.4	824.6	5.3	6.2	4.2	6.2	4.7
COMMUTERS/REGIONALS											
Enplanements (Millions)											
RTMs (Billions)	24.4	38.7	42.8	46.2	49.5	89.9	8.4	10.6	7.9	7.1	6.4
	3.6	7.0	8.2	9.2	10.0	20.1	12.5	17.1	12.2	8.7	7.8
FLEET											
Air Carrier	2,938	4,252	4,206	4,265	4,311	5,928	5.3	(1.1)	1.4	1.1	2.9
Commuter	1,551	1,896	1,960	2,018	2,066	2,381	3.4	3.4	3.0	2.4	1.6
General Aviation (000)	220.9	197.4	198.4	198.7	199.7	212.3	(0.1)	0.5	0.2	0.5	0.6
HOURS FLOWN (Millions)											
Air Carrier	7.7	10.5	10.6	10.9	11.4	15.7	4.7	1.0	2.8	4.6	3.3
General Aviation	36.2	30.5	29.9	30.1	30.6	35.3	(0.4)	(2.0)	0.7	1.8	1.4

Source: 1985-92: DOT-BSPA, FAA data
1993-2004: FAA forecast

FLIGHT SERVICE STATION CONSOLIDATION SCHEDULE

Mr. CARR. Please update the transition schedule of remaining flight service station consolidations shown on pages 507-509 of last year's hearing record.

[The information follows:]

TRANSITION SCHEDULE OF REMAINING 83 FLIGHT SERVICE STATIONS

STATE	FACILITY	TYPE	DATE	AFSS
AK	Anchorage	FSS	6/1/93	Kenai
AK	Barrow	XFSS	10/1/95	Fairbanks
AK	Bethel	FSS	10/1/93	Kenai
AK	Bettles	FSS	5/3/93	Fairbanks
AK	Big Delta	FSS	5/3/93	Fairbanks
AK	Cold Bay	XFSS	10/1/95	Kenai
AK	Cordova	FSS	5/3/93	Juneau
AK	Deadhorse	XFSS	10/1/95	Fairbanks
AK	Dillingham	XFSS	10/1/95	Kenai
AK	Gulkana	FSS	10/1/94	Kenai
AK	Homer	XFSS	10/1/95	Kenai
AK	Iliamna	XFSS	10/1/95	Kenai
AK	Ketchikan	XFSS	10/1/95	Juneau
AK	King Salmon	FSS	5/3/93	Kenai
AK	Kotzebue	XFSS	10/1/95	Fairbanks
AK	McGrath	XFSS	10/1/95	Kenai
AK	Nome	XFSS	10/1/95	Fairbanks
AK	Northway	XFSS	10/1/95	Fairbanks
AK	Palmer	XFSS	10/1/95	Kenai
AK	Sitka	XFSS	10/1/95	Juneau
AK	Talkeetna	XFSS	10/1/95	Kenai
AK	Tanana	FSS	10/1/94	Fairbanks
AL	Birmingham	FSS	1/30/94	Anniston
AL	Dothan	FSS	1/30/94	Anniston
AL	Mobile	FSS	4/1/94	Anniston
AL	Montgomery	FSS	1/30/94	Anniston
AL	Muscle Shoals	XFSS	10/1/95	Anniston
AL	Tuscaloosa	FSS	1/30/94	Anniston
AZ	Tucson	FSS	9/10/93	Prescott
CA	Red Bluff	FSS	4/1/94	R. Murieta
CA	Arcata	XFSS	10/1/95	Oakland
CA	Bakersfield	FSS	4/1/94	Riverside
CA	Fresno	FSS	1/30/94	R. Murieta
CA	Marysville	XFSS	10/1/95	R. Murieta
CA	Sacramento	FSS	4/1/94	R. Murieta
CA	Salinas	FSS	1/30/94	Oakland
CA	Stockton	FSS	1/30/94	R. Murieta
CA	Ukiah	XFSS	10/1/95	Oakland
CO	Eagle	FSS	4/1/94	Denver
FL	Crestview	XFSS	10/1/95	Gainesville
FL	Jacksonville	FSS	4/1/94	Gainesville
ID	Burley	FSS	1/30/94	Boise
ID	Idaho Falls	FSS	1/30/94	Boise

TRANSITION SCHEDULE OF REMAINING 83 FLIGHT SERVICE STATIONS

STATE	FACILITY	TYPE	DATE	AFSS
KY	Bowling Green	XFSS	10/1/95	Louisville
KY	London	XFSS	10/1/95	Louisville
MD	Salisbury	XFSS	10/1/95	Leesburg
MI	Marquette	XFSS	10/1/95	Green Bay
MS	Jackson	FSS	4/1/94	Greenwood
MS	McComb	FSS	1/30/94	Greenwood
MS	Meridian	FSS	4/1/94	Greenwood
MT	Butte	FSS	4/1/94	Great Falls
MT	Bozeman	XFSS	10/1/95	Great Falls
NC	Eliz. City	FSS	1/30/94	Raleigh
NC	Hickory	XFSS	10/1/95	Raleigh
NC	New Bern	XFSS	10/1/95	Raleigh
NC	Rocky Mount	XFSS	10/1/95	Raleigh
NM	Carlsbad	FSS	1/30/94	Albuquerque
NM	Deming	FSS	1/30/94	Albuquerque
NM	Gallup	FSS	1/30/94	Albuquerque
NM	Las Vegas	FSS	4/1/94	Albuquerque
NM	Roswell	FSS	4/1/94	Albuquerque
NM	Truth or Consq.	FSS	1/30/94	Albuquerque
NM	Tucumcari	FSS	1/30/94	Albuquerque
NY	Elmira	FSS	10/1/93	Buffalo
NY	Utica	FSS	4/1/94	Buffalo
OR	Redmond	XFSS	10/1/95	McMinnville
PA	Bradford	XFSS	10/1/95	Altoona
PA	Dubois	XFSS	10/1/95	Altoona
SD	Aberdeen	FSS	9/5/93	Huron
SD	Pierre	XFSS	10/1/95	Huron
SD	Rapid City	FSS	9/5/93	Huron
SD	Watertown	FSS	4/1/94	Huron
TN	Tri-City	FSS	4/1/94	Nashville
TX	El Paso	FSS	7/31/93	Albuquerque
VA	Newport News	FSS	10/1/93	Leesburg
WA	Spokane	FSS	4/1/94	Seattle
WA	Walla Walla	FSS	4/1/94	Seattle
WV	Bluefield	FSS	1/30/94	Elkins
WV	Martinsburg	FSS	1/30/94	Elkins
WV	Morgantown	FSS	10/1/93	Elkins
WV	Parkersburg	FSS	1/30/94	Elkins
WY	Sheridan	FSS	1/30/94	Casper
WY	Worland	FSS	1/30/94	Casper

AIR TRAFFIC EN ROUTE CENTERS—POSITIONS AND EMPLOYMENT

Mr. CARR. Please update the table on page 512 of last year's hearing record showing authorized positions and employment for each of your en route centers as well as authorized CWF and on-board FPL controllers.

[The information follows:]

AIR TRAFFIC CENTER POSITIONS AND EMPLOYMENT

LOCATION	CENTER CODE	AUTHORIZED STAFFING FY-93	CURRENT ON-BOARD STAFFING *	DEVELOPMENTAL CONTROLLERS ON-BOARD *	FPL's ON-BOARD *
Anchorage, AK	ZAN	150	146	27	104
Kansas City, MO	ZKC	463	413	63	298
Washington, DC	ZDC	472	460	96	316
New York, NY	ZNY	331	366	111	217
Chicago, IL	ZAU	490	519	167	300
Indianapolis, IN	ZID	408	378	86	257
Minneapolis, MN	ZMP	336	397	118	236
Cleveland, OH	ZOB	514	477	101	329
Boston, MA	ZBW	311	353	89	225
Denver, CO	ZDV	367	366	85	242
Salt Lake City, UT	ZLC	232	248	53	164
Seattle, WA	ZSE	233	284	63	191
Jacksonville, FL	ZJX	405	398	118	238
Miami, FL	ZMA	253	365	110	221
Memphis, TN	ZME	368	373	96	237
San Juan, PR	ZSU	54	51	9	33
Atlanta, GA	ZTL	502	529	129	345
Albuquerque, NM	ZAB	387	350	72	236
Fort Worth, TX	ZFW	440	432	114	274
Houston, TX	ZHU	366	420	133	245
Honolulu, HI	ZHN	60	60	20	32
Los Angeles, CA	ZLA	378	395	146	208
Oakland, CA	ZOA	388	319	101	180
Agana, GU	ZUA	15	13	0	11
Central Flow	CFCF	60	42	0	42
TOTALS		7,983	8,154	2,107	5,181

* Data from CPMS as of September 30, 1992

NOTE: Authorized Staffing (per Staffing Standard) and current on board staffing refers to total controller workforce.

GENERAL AVIATION INSTRUMENT OPERATIONS

Mr. CARR. Please update the information on general aviation instrument operations as shown on pages 513-514 of last year's hearing.

[The information follows:]

General Aviation Instrument Operations for FY 84 through FY 94 at terminals are shown below: (Source: Previous Table and APO forecasts)

GENERAL AVIATION INSTRUMENT OPERATIONS AT FAA TOWER AIRPORTS

[In millions]

Year	General aviation	Total	General aviation as percent of total
1984.....	16.0	37.3	42.9
1985.....	16.4	38.7	42.4
1986.....	16.8	40.5	41.5
1987.....	17.9	43.4	41.2
1988.....	18.3	44.5	41.1
1989.....	18.8	45.2	41.6
1990.....	19.0	46.4	40.9
1991.....	18.1	45.1	40.1
1992.....	18.2	45.6	39.9
1993.....	18.4	46.4	39.7
1994.....	18.9	47.6	39.7

Note.—1993 and 1994 are forecasts.

COST REDUCTIONS FROM PAY DEMONSTRATION PROJECT

Mr. CARR. Provide a chart showing total costs reduced from the fiscal year 1994 budget request resulting from the proposal to discontinue the pay demonstration project, broken down by budget activity and subactivity.

[The information follows:]

<i>Budget activity/subactivity</i>	<i>Estimated fiscal year 1994 cost</i>
Air traffic:	
Centers.....	\$9,203,000
Towers.....	6,574,000
Total.....	15,777,000
Airway facilities:	
Facility maintenance.....	3,232,000
Total.....	3,232,000
Aviation regulation and certification:	
Flight standards.....	908,000
Aircraft certification.....	83,000
Total.....	991,000
Total for all covered employees.....	20,000,000

EXPLANATION TO DISCONTINUE PAY DEMONSTRATION PROJECT

Mr. CARR. Please provide a detailed explanation of why you believe the pay demonstration project should be discontinued, and

cite relevant statistics regarding the attrition and recruitment rates at these facilities both before and during the project.

[The information follows:]

FAA examined numerous options before deciding to terminate the pay demonstration project. However, FAA is considerably constrained in its flexibility to reduce program costs in the short term. Over 75 percent of the Operations appropriation is for salaries and benefits. The balance is made up mostly of rent, communications, and utilities costs as well as contractual support.

In order to meet the Administration's goals for the FY 1994 budget, FAA identified \$169 million in program reductions. In addition to the \$20 million for the pay demo, the reductions include \$44 million in savings due to FTE reductions, \$27 million for salaries and benefits savings due to turnover, and \$78 million for DUATS, non-recurring Leased Telecommunications costs, and other administrative costs.

FAA senior management decided that given a choice between further reducing the level of program effort (i.e., additional staffing or contractual support reductions), the best cost versus benefit alternative was to terminate the pay demo early. While the demonstration project has proven to have a positive impact on recruitment and retention, it has not justified the substantial cost. In addition, the Federal Employees Pay Comparability Act (FEPCA) contains a number of provisions designed to solve recruitment and retention problems. These provisions enable management to be more selective in their application and are considerably more cost effective.

The following chart shows the average number of hires into covered facilities per year, average number of separations from covered facilities per year, and average turnover rate, for the 3½ years prior to implementation of the pay demo and for the 3½ years of operation of the pay demo:

	Pre-demo (1/86-6/89)				Post-demo (6/89-12/92)			
	AT	AF	FS	Total	AT	AF	FS	Total
Hires	326	54	51	431	210	55	24	289
Separations	252	47	43	342	161	43	22	226
Turnover rate	17.5%	11.4%	35.4%	17.3%	9.7%	9.6%	15.8%	10.1%

PAY DEMONSTRATION ALLOWANCE RATES BY FACILITY

Mr. CARR. This project allows a pay increase of up to 20 percent. What are the actual increases paid at the various facilities in the pay demonstration program, and what rates of locality pay (if any) are these employees not receiving as a result of the project?

[The information follows:]

Employees covered by the pay demonstration project receive quarterly retention allowances payments of up to 20 percent of base pay. Employees at covered facilities in the New York, Los Angeles, and Oakland areas currently receive payments of 12 percent of base pay. The retention allowance for employees in these areas was reduced from 20 percent to 12 percent to offset the 8 percent interim geographic adjustments (IGAs) which began on January 13, 1991. The 8 percent IGAs are paid to all Federal employees in these geographic areas, including those covered by the demonstration project. Employees at covered facilities in the Chicago area currently receive retention allowance payments of 20 percent of base pay. IGAs are not authorized for Federal employees in the Chicago area.

Following is a list of facilities covered by the demonstration project, the current allowance percentage, and the current IGA percentage:

[In percent]

Facility	Demo Project	IGA
Chicago Area:		
Chicago Center	20	NA

[In percent]

Facility	Demo Project	IGA
Chicago O'Hare Tower.....	20	NA
Chicago O'Hare TRACON	20	NA
Chicago Center AF Sector	20	NA
Chicago AF Sector.....	20	NA
New York Area:		
New York Center.....	12	8
New York TRACON.....	12	8
New York Center AF Sector	12	8
New York TRACON AF Sector Field Office	12	8
Farmingdale FSDO/NY MIDO	12	8
New York FSDO	12	8
Teterboro FSDO/MIDO.....	12	8
Oakland Area:		
Bay TRACON	12	8
Bay TRACON AF Sector Field Office.....	12	8
Los Angeles Area:		
Coast TRACON.....	12	8
Los Angeles Tower.....	12	8
Los Angeles TRACON.....	12	8
Coast TRACON AF Sector Field Office.....	12	8
Los Angeles AF Sector	12	8
Los Angeles FSDO.....	12	8

NA means not available.

PAY DEMONSTRATION PROJECT STAFFING BY FACILITY/LOCATION

Mr. CARR. Please provide a breakdown of the number of onboard employees in the pay demonstration project by facility and location. Please include all FAA employees, not just those in air traffic. [The information follows:]

Demonstration project facilities and number of employees covered (as of December 12, 1992);

	Total	Air traffic	Airway facilities	Flight standards
Total for all sites	2,352	1,742	467	143
New York Area	945	683	157	105
New York Center.....	507	412	95	
New York TRACON.....	333	271	62	
Farmingdale FSDO/NY/MIDO	23			23
New York FSDO	41			41
Teterboro FSDO/MIDO.....	41			41
Chicago Area.....	924	717	207	
Chicago Center.....	613	544	87	
Chicago O'Hare Int'l.....				
Tower.....	58	58		
TRACON	115	115		
AF Sector	120		120	
Oakland Area.....	128	106	22	
Bay TRACON	128	106	22	
Los Angeles Area	355	236	81	38
Coast TRACON.....	98	88	10	
Los Angeles International				
Tower.....	55	55		
TRACON	93	93		
AF Sector.....	71		71	
Los Angeles FSDO.....	38			38

PAY DEMONSTRATION STAFF—ELIGIBLE TO RETIRE

Mr. CARR. Please provide statistics showing the numbers of employees covered by the pay demonstration project which will be eligible to retire over the next year, by facility.

[The information follows:]

The following chart shows the number of employees currently on board at covered facilities who will be eligible for optional or early retirement within the next year. (Early retirement is authorized for air traffic control specialists of any age with at least 25 years of operational air traffic control experience, or 50 years of age with 20 years of operational experience.)

Facility	Optional retirement	Early retirement
New York Center.....	32	35
New York TRACON.....	20	13
Chicago Center.....	30	25
Chicago O'Hare Tower.....	1	4
Chicago O'Hare TRACON.....	5	16
Bay TRACON.....	7	11
Coast TRACON.....	9	12
Los Angeles Tower.....	0	3
Los Angeles TRACON.....	4	10
Total Air Traffic.....	108	129
N.Y. Center AF Sector.....	27	NA
N.Y. TRACON AF Sector field Office.....	18	NA
Chicago Center AF Sector.....	21	NA
Chicago AF Sector.....	20	NA
Bay TRACON AF Sector Field Office.....	7	NA
Coast TRACON AF Sector Field Office.....	2	NA
Los Angeles AF Sector.....	12	NA
Total Airway Facilities.....	107	NA
Farmingdale FSDO.....	0	NA
New York FSDO.....	12	NA
New York MIDO.....	4	NA
Teterboro FSDO.....	9	NA
Teterboro MIDO.....	3	NA
Los Angeles FSDO.....	3	NA
Total Flight Standards.....	31	NA
Total for all facilities.....	246	129

NA means not available

IG RECOMMENDATIONS ON PCS MOVES

Mr. CARR. Costs for your permanent change of station moves have been increasing at a very high rate (approximately 10 percent a year). If costs had been held to the fiscal year 1990 level, you could finance about 40 percent more moves in fiscal year 1994 with your current budget request. A couple of years ago, the IG made a number of recommendations to the FAA on ways to improve management and reduce costs in the PCS program. Have all of the IG's recommendations been implemented? If not, what barriers still exist?

[The information follows:]

The IG audit report "Report on Permanent Change of Station Relocation Assistance Service Program," dated July 18, 1989, recommended ways to improve the De-

partment of Transportation's (DOT) relocation services program. The relocation services program provides employees with home selling assistance and other services through contracts with relocation management companies. Most of the IG's recommendations were implemented by March 1990. The remaining recommendations, which will not be implemented, are discussed below:

1. In coordination with Office of the Secretary, DOT, use a cross-servicing arrangement to establish a central office to manage the relocation services for all modal administrations.

The Office of the Secretary determined that the modal administrations did not concur with centralizing the relocation services coordinator function DOT-wide. Since the purpose of the IG's recommendation was to improve the efficiency and effectiveness of employee counseling, it was determined that this could be accomplished more effectively by conducting annual training sessions for administrative personnel involved in the program and including pre-transfer counseling services in the relocation services contract. The alternative actions were implemented in November 1989.

2. Establish a PCS relocation information database that provides cost and other pertinent data on relocations for managers use in monitoring the effectiveness and efficiency of the program.

The FAA submitted a systems change request to the Office of the Secretary in September 1990, to develop reports from PCS data that is collected in the Departmental Accounting and Financial Information System. The request has not yet been processed due to a backlog of other systems change requests that have a higher priority within the Department. However, as an interim measure, the FAA has been producing an annual PCS report based on data which is manually compiled.

CAUSE FOR INFLATION IN PCS MOVES

Mr. CARR. What is causing the high inflation in PCS moves, and is that unique to the FAA?

[The information follows:]

Inflation, income tax rates, and the health of real estate markets have a major impact on the cost of relocations. The largest cost component of PCS moves (38 percent of total PCS costs) is the relocation services contract, which is necessary to help employees sell their homes. The increase in relocation services contract cost is due to unhealthy real estate markets especially in New England states, California, and Hawaii. Because these homes remain in the contractor's inventory longer and often sell below the appraised value, they result in higher contract costs.

Other causes for FAA's increased costs include inflation and increased allowances under the Federal Travel Regulations (FTR). The increased FTR allowances include relocation benefits for new appointees, separate relocation benefits for relocated employees who are members of the same immediate family, and relocation income tax allowances for employees who are transferred to, from, or between U.S. territories and possessions.

The FAA's increase in PCS cost is consistent with that of other government agencies and private industry. According to the Employee Relocation Council's "1992 Relocation Trends Survey," average relocation expenses have been rising between 9 and 13 percent per year.

COSTS TO OPERATE AND MAINTAIN THE LOGISTICS CENTER

Mr. CARR. Please provide a detailed breakdown of the costs to operate and maintain the FAA Logistics Center in Oklahoma City, for each of fiscal years 1992 through 1994, and provide the number of staffing resources at that facility for those years.

[The information follows:]

[Dollars in thousands]

	Fiscal year—		
	1992	1993	1994
Positions.....	632.0	620.0	620.0
FTE's.....	611.3	¹ 605.5	569.3

[Dollars in thousands]

	Fiscal year —		
	1992	1993	1994
PC&B	25,761.6	¹ 26,708.2	27,041.0
(Overtime)	(613.4)	(663.4)	(663.4)
Subtotal	25,761.6	26,708.2	27,041.0
Travel	272.2	470.7	440.7
Rent, commission, utilities	3,352.8	3,315.9	3,652.3
Transportation	2,932.8	3,174.4	3,444.2
Printing	1,372.7	1,019.8	1,488.4
Contracts:			
NAS supply support	13,996.1	14,461.1	18,675.8
Raytheon (A-76)	2,444.9	3,671.1	3,475.4
Guard	145.9	160.6	159.1
Janitorial	82.9	98.2	165.0
Facility/grounds maintenance	869.1	1,129.4	1,139.2
Equipment maintenance	25.2	29.0	30.2
Other	1,700.4	816.3	547.8
Copiers	35.6	41.9	45.1
Office moves	28.2	29.4	30.6
Motor fleet	69.5	66.2	64.4
Multi-media	8.7	16.7	15.1
Supplies	46,611.9	44,364.5	44,880.0
Equipment	740.3	3.3	
Interfunctional equipment	6.0	17.6	18.1
Subtotal other objects	74,665.2	72,886.1	78,271.4
Total program	² 100,426.8	² 99,594.3	² 105,312.4
	(64,894.4)	(62,000.0)	(67,000.0)

¹ Includes NAS supply support.² 584.6 FTEs funded due to end-of-year employment ceiling.

IMPACT OF REDUCTIONS ON DEPOT MAINTENANCE

Mr. CARR. Last year, you submitted for the record a chart showing that, for the fiscal years 1989 through 1993, the FAA Logistics Center had requested a total of \$370,751,000 for the acquisition of spares and repair parts. The FAA's budgeting process reduced that amount to \$307,210,000, which is a reduction of \$63,541,000 (17 percent). I am concerned about the possible backlog of depot maintenance which this may represent. Is this a concern of the FAA, or does the Logistics Center not know how to budget properly?

[The information follows:]

Concern about the possible backlog of depot maintenance is certainly valid. The primary impact of this 17 percent reduction has been less stock replenishment and less repairs to put Exchange and Repair (E&R) assets on the shelf. We have been unable to take advantage of economic procurement quantities (EPQ) and/or obtain adequate quantities of stock during this time. Additionally, lack of available stock has forced us to utilize Repair and Return (R&R) to the customer rather than the more economical E&R. These forced measures have resulted in an increased number of priority requisitions, longer lead times, and lack of spares/repair parts for older equipment/systems. In addition to gaining approximately \$3.0 million in inventory from Operations Clean Sweep, several management initiatives have been implemented during this time frame in order to accomplish more with less. These include working closer with the customer to determine that only essential spares are issued enhancing customer awareness to ensure over all efficiency and economy, and utilizing the less expensive in-house E&R repair where possible.

It is not a question of the FAA Logistics Center budgeting properly. The Logistics Center has reasonably forecast its funding requirements over the years, but the

budget process has not been able to generate the full amount of resources required. Consequently, the Logistics Center has taken extraordinary steps to manage its way through this dilemma, be it postponement, deferral, reprioritization, or aggressive utilization of less costly alternatives.

There is a limit to the FAA Logistics Center's capacity to continue to absorb increased requirements with decreased resources without impacting NAS Logistics Support. Operational data show that support for some of our older systems in particular is deteriorating in two important areas: The average number of equipment/systems failure per facility and the mean time to repair have increased. FAALC management is concerned about this trend and is addressing alternatives to reverse it.

FY 1993 REVISED ESTIMATE FOR SPARES AND REPAIRS

Mr. CARR. In the FY 1993 budget you requested \$69,388,000 for this activity. Your current estimate for FY 1993 is only \$61,315,000. Why did you reduce the funding by \$8,073,000 (11.6 percent)?

[The information follows:]

Based on the FY 1994 Congressional Submission, the current estimate (allowance) for FY 1993 is \$62,000,000 versus the \$61,315,000 shown above. The difference between the FY 1993 budget request of \$69,388,000 is \$7,388,000 or 10.6 percent less than the current estimate.

Our FY 1993 budget request of \$69,388,000 included a base of \$64,400,000, a 2.7% inflationary increase, and a requested program increase of \$3,188,000 for new systems. The approved amount for FY 1993 did not provide funding for inflation or the requested increase. Furthermore, we had to move funds from NAS Supply Support to cover uncontrollable utilities costs and other mandatory service contracts within the NLS activity for which funding was not sufficient. This necessitated the revised FY 1993 current estimate of \$62,000,000.

While our requirements for NAS Supply Support did not decrease, we were forced to reprioritize in order to remain within available funding. The inflationary increases and new system requirements increases were absorbed within the current funding level at the expense of less critical supply support requirements including stock replenishment. Additionally, more Return and Repair (R&R) is being utilized in lieu of Exchange and Repair (E&R) since spares are not available in the Logistics Center warehouse (due to funding deficiencies in E&R). As a result, our operational data on some older systems indicate an increase in equipment/systems failures and the mean time to repair due to lack of available spares.

INITIAL REQUEST FOR SPARES AND REPAIRS

Mr. CARR. You are requesting \$65,499,000 for fiscal year 1994. How does this compare to the Logistics Center's initial request?

[The information follows:]

The FAA Logistics Center's (FAALC) initial request was \$74,339,600 during the formulation of the 1994 budget.

DEPOT SPARE FUNDING REQUEST

Mr. CARR. Please update the table on page 399 of last year's hearing record regarding depot spare funding requests.

[The information follows:]

DEPOT SPARE FUNDING *—NAS SUPPLY SUPPORT

	Request	Allowance
1990	68,235.5	¹ 70,623.6
1991	70,224.0	¹ 67,167.1
1992	66,201.0	¹ 64,894.4
1993	77,552.0	² 62,000.0
1994	74,339.6	² 67,000.0

¹ Actual (Obligations)

² Estimated

* Depot Spare Funding should be changed to NAS Supply Support. This requirement includes stock replenishment, repair and maintenance of spare parts, transportation, and commercial contract E&R repair.

GUIDELINES FOR IN-HOUSE VS. CONTRACT MAINTENANCE

Mr. CARR. What guidelines do you use to determine when to conduct maintenance in-house and when to contract it out?

[The information follows:]

The basic guidelines and procedures used are as follows:

For in-house maintenance:

1. We look at number of systems (should be large number).
2. Response/restoration has to occur immediately or within 2 hours.
3. FAA staffing has to be available for training.
4. That the system is going to be in the FAA inventory longer than ten years.
5. The contract cost is prohibitive.

For contracting out:

1. We look at number of systems (should be small).
2. Response/restoration can be within 24 to 48 hours.
3. FAA staffing is not available.
4. The life cycle is less than 10 years.

CONTRACT MAINTENANCE SUPPORT CONTRACTS

Mr. CARR. Please list all major contracts for maintenance of NAS systems and equipment, by system and amount for each of fiscal years 1993 and 1994, similar in format to that shown on page 523 of last year's hearing record.

[The information follows:]

	Millions of dollars	
	FY 1993	FY 1994
AWOS Data Acquisition System.....	0.0	0.3
Automated Surface Observation System.....	0.5	1.9
Airport Weather Information System.....	0.2	0.2
Airport Weather Observation System.....	2.1	2.5
Classified Communication System.....	0.1	0.1
Digital Altimeter Setting Indicator.....	0.1	0.1
Data Link Processor.....	0.0	0.5
Data Multiplexing Network.....	0.0	6.6
Dynamic Ocean Track System.....	0.0	0.6
Enhanced Traffic Management System.....	1.6	2.0
Maintenance of Host Computer.....	3.7	3.7
Host Computer License.....	0.2	0.2
Integrated Communications Switching System.....	16.3	15.6
Low Density Radio Communications Link.....	0.0	0.3
Low Level Windshear Alert System.....	0.2	0.0
Maintenance Control Center.....	0.0	0.1
Maintenance Data Terminal.....	0.4	0.4
Model 1 FSAS Full Capacity.....	6.5	7.2
Maintenance Processor System.....	0.3	0.3
Meteorological Weather Processor System.....	2.4	2.4
National Radio Communication System.....	0.2	0.5
Next Generation Radar.....	1.4	2.5
Oceanic Display and Planning System.....	0.0	0.1
Off-Shore Flight Data Processing System.....	0.0	0.1
Peripheral Adapter Module Replacement Item.....	0.1	0.2
Pre-Departure Clearance System.....	0.0	1.4
Small Tower Voice Switch.....	0.0	0.1
Weather Message Switching Center Replacement.....	0.6	0.6
Total contract maintenance.....	37.0	50.5

AVERAGE FTE COSTS FOR IN-HOUSE VS. CONTRACT MAINTENANCE

Mr. CARR. What is the average cost per FTE for in-house maintenance and for contract maintenance?

[The information follows:]

Most of our maintenance contracts are performance non-personnel service contracts; therefore, contract cost (includes contractor direct management cost, contractor cost attributed to contract monitoring, contractor administration cost, contractor attrition training cost, etc.) is not equitable to government FTEs.

Performance contracts specify "what" is to be accomplished along with criteria for satisfactory accomplishment, rather than "how" the contractor is to accomplish requirements. Personnel service contracts require contractors to provide numbers of people for accomplishment of a task.

Maintenance technician cost and direct personnel overhead cost vary considerably between contractors. These costs vary dependent upon a contractor's business organization and approach to meeting the maintenance performance requirements.

CONTRACT MAINTENANCE INCREASE

Mr. CARR. Your fiscal year 1994 request of \$58,534,000 for contract maintenance represents a 56 percent increase over the fiscal year 1993 level. Why is such a large increase needed in a single year?

[The information follows:]

The increase can be attributed to a number of things in fiscal year 1994, namely: Maintenance of commercially off the shelf equipment (cots); new systems coming on line from the F&E appropriation to the OPS appropriation; a substantial increase in number of units being installed to support existing requirements; cost of new contracts due to escalation. This increase will ensure a clean "hand-off" from F&E to operations support so that critical maintenance of these highly complex systems can continue without degradation to safety.

CONTRACT MAINTENANCE—SHIFT TO CONTRACTORS

Mr. CARR. While you are requesting a big increase for contract maintenance, you are also proposing to reduce your field maintenance workforce by 237 in fiscal year 1994 (compared to a base of 8,923 personnel). Does this indicate that you are shifting more of this work from government employees to private contractors?

[The information follows:]

We are not shifting maintenance work from government employees to private contractors. The maintenance that will be funded with the increase for contract maintenance is for new systems that have not previously been maintained by in-house technicians.

IMPACT OF FIELD MAINTENANCE WORK FORCE REDUCTIONS

Mr. CARR. Is it wise to be reducing the field maintenance workforce by 237 staff years when you are planning to commission significant suites of new equipment during the year?

[The information follows:]

The staffing summary in the FY 1994 justifications for Systems Maintenance does indeed show an employment reduction of 237 for the field maintenance workforce. This assumes an FY 1993 end-of-year employment level of 9,160, the level requested in the FY 1993 budget. In fact, the FM employment level has not reached 9,160, and is not currently planned to. We began FY 1993 and 8,995 and were at 8,905 as of March 31, 1993. Due to overall priorities, both for the federal government as a whole and within FAA, we do not now plan to hire up to the 9,160 level in FY 1993. So, rather than a 237 reduction, the proposed FY 1994 employment level will actually continue FM employment at approximately its current level.

We believe we can adequately maintain the NAS at this employment level because of the following:

Selective deferral of non-critical maintenance tasks; A core of field technical personnel with much higher than average level of experience; Built in redundancy within NAS facilities, which prevents service interruption, even if certain subsystems fail; Extraordinary efforts by today's AF work force, especially technicians and first line supervisors; and Open watches on selected facilities.

CONTRACT MAINTENANCE COST

Mr. CARR. Please update the chronological data on contract maintenance shown on page 526 of last year's hearing record.

[The information follows:]

Total Contract Maintenance Cost

Fiscal year:	Thousands
1990.....	19,416.8
1991.....	19,300.0
1992.....	23,462.0
1993.....	37,411.0
1994.....	58,534.0

The increase can be attributed to additional system implementation, system funding responsibility transferring from F&E to OPS, new maintenance contracts, and modifications to existing contracts.

IMPACT OF EQUIPMENT OUTAGES ON SYSTEM RELIABILITY

Mr. CARR. On page 48, you show that the NAS system equipment and service availability remains at very high levels: 99.82 percent availability in fiscal year 1990 and an estimate of 99.85 percent for fiscal year 1994. Yet we also hear tales of increasing equipment outages and decreasing system reliability. Why aren't these problems indicated by your statistics?

[The information follows:]

While the overall status of the NAS shows an increasingly high Equipment and Service (E&S) availability, it is not an indicator of specific facility/system degradation. E&S availability or reliability statistics are based on system level tracking of full outages with a duration of 1 minute or more. Although these measurements serve the purpose of portraying total NAS availability or reliability, we realize a lower level tracking method is crucial to supporting claims of failing equipment and shortage of personnel. Even though subsystem level performance is not easily tracked at this time, we do know redundancy is a major factor in the high availability figures. In addition, we do not presently capture information which depicts extra personnel hours expended in keeping facilities operating in the NAS. Our near-term transition from the paper log environment to equipment/line replaceable unit tracking and full automated logging should provide us the means to collect data which will support these increasing equipment outages. We will also be able to use the data to portray the level of effort required to keep facilities operating safely in the NAS.

INCREASE FOR SOFTWARE MAINTENANCE SUPPORT

Mr. CARR. You are requesting an additional \$7,000,000 for software maintenance support at the FAA Technical Center. Please explain in detail why these additional funds are needed.

[The information follows:]

The Operational Support Service (AOS) is responsible for providing second level field software maintenance support. The \$7,000,000 is to cover the cost associated with new and continued contractual support for on-going operations and maintenance (O&M) of National Airspace System (NAS) equipment. This funding level will support the following systems:

Peripheral Adapter Module Replacement Item (PAMRI) system software to analyze and resolve national and system-wide problems in the areas of hardware and firmware;

Oceanic Display and Planning System (OSAPS) to provide support and maintenance for the operational support at the Oakland and New York sites;

Off-shore Flight Data Processing System (OFDPS) to provide support and maintenance to assure that adequate operational support is provided to sustain the system; and

Airport Surveillance Radar (ASR-9) system to resolve various system trouble reports.

Funding support for second level software becomes more and more necessary as new systems become operational in the National Airspace System (NAS).

MAINTENANCE COSTS FOR CASTLE AIR FORCE BASE

Mr. CARR. You are requesting a total of \$4,177,000 over a zero fiscal year 1993 base for the operation and maintenance of DOD facilities that the FAA will take over due to DOD base closures. Among these is the RAPCON at Castle Air Force Base in California, for which you are requesting \$500,000. Since this base isn't scheduled to close until September 1995, why are you requesting funds now?

[The information follows:

It takes approximately 2 years to train and certify a technician on equipment. Funding is required for training on military equipment.

Unless otherwise negotiated, the USAF will maintain the current level of air traffic operations and maintenance support up until the closure date. However, a transition from USAF to FAA control normally starts 6 months prior to the closure date.

TRANSITION PLANNING FOR TAKEOVER OF DOD FACILITIES

Mr. CARR. You are also requesting \$200,000 for transition planning and visits to military bases on the closure list. Except for those cases where the FAA will need to take over specific ATC facilities as part of the NAS system, why should the FAA be doing this type of work?

[The information follows:]

The \$200,000 request is only for transition planning and visits to military bases on the closure list where it is anticipated the FAA will need to take over specific ATC facilities.

PLANNED COMMISSIONINGS OF NEW FACILITIES

Mr. CARR. In the fiscal year 1993 budget, you estimated commissionings of 427 facilities during that year. Please provide a chart, similar in format to that shown on page 520 of last year's hearings, which compares your current 1993 commissioning estimates with those estimated for 1993 in your 1993 budget submission.

[The information follows:]

FY 1993 COMMISSIONED FACILITIES

Per 1993 Congressional Record

4/15/93

Facility Name	Congressional Submission	Change	Revised Estimated
Air route surveillance radar.....	7	-7	0
ATC beacon interrogator.....	3	-3	0
FAA operated tower.....	2	-2	0
FAA contract tower.....	7	-1	6
Airport surface detection eqpt.....	23	-14	9
Airport surveillance radar.....	12	-1	11
ATC radar beacon.....	13	3	16
Automated radar terminal system.....	9	-7	2
Radio communications link repeater.....	42	14	56
Radio communications link terminal.....	29	11	40
Automated flight service stations.....	2	0	2
Auxiliary flight service stations.....	23	-23	0
Flight svc data processing sys.....	7	-7	0
Automated wx observation sys.....	32	3	35
Next generation weather radar.....	28	-13	15
Direction finder equipment.....	21	-19	2
Remote communications facility.....	7	27	34
Remote communications outlet.....	18	-1	17
Approach light system.....	10	-9	1
Distance measuring system.....	3 *	1	4
Instrument landing system.....	39 *	-12	27
Lead-in light facility.....	3	-3	0
Microwave landing system.....	9	-9	0
Omnidirectional airport lighting.....	3	-2	1
Runway end identification light.....	30	38	68
Runway visual range.....	38	-18	20
Tactical air navigation equipment.....	5	-5	0
Visual approach slope indicator.....	2	2	4
TOTAL.....	427	-57	370

* These numbers were transposed in the 1993 Congressional submission.

FIELD MAINTENANCE—OTHER OBJECTS COSTS

Mr. CARR. Please update the table on field maintenance other costs as shown on pages 522-523 of last year's hearing record by providing data for fiscal year 1993 and 1994.

[The information follows:]

The following represents the breakdown of other objects costs for field maintenance:

[In thousands of dollars]

	Fiscal Year	
	1993	1994
Travel.....	13,874	13,239
Transportation	10,942	10,814
RC&U	83,166	85,902
Printing and reproduction	29	27
Other services	76,162	89,441
Supplies and materials	8,589	6,383
Equipment	758	673
Land and structures	45	40
Insurance claims	103	86
Total	193,668	206,605

LINCS

Mr. CARR. Please provide a brief summary of the LINCS contract and update us on the status of the contract today.

[The information follows:]

The Leased Interfacility NAS Communications System (LINCS) contract was awarded to MCI Telecommunications on March 13, 1992 and notice to proceed was given on June 2, 1992 following denial of a protest. LINCS will provide transmission channels which are leased on a systems basis to replace 14,000 individual existing channels. The contract guarantees highly reliable performance/service. Additionally, it provides for diverse channel paths between major FAA facilities to virtually eliminate single point failures for the more critical circuits.

Currently, LINCS is in the implementation phase, with MCI establishing the infrastructure of the network. The backbone between the FAA's air route traffic control centers is expected to be in place by September 1993.

LINCS FUNDING PROFILE

Mr. CARR. Please provide a funding profile for this contract by fiscal year and state where in the operations budget funding is located.

[The information follows:]

Recurring costs for LINCS will not increase from the existing embedded base. However, new funding for non-recurring charges will be required for transition.

Funding Profile

<i>Implementation cost</i>	<i>In millions</i>
Fiscal years:	
1992	\$14.9
1993	7.8
1994	11.4

Implementation costs are included in the "Leased Telecommunications" budget item.

LINCS SAVINGS

Mr. CARR. Last year, you advised us that LINCS was estimated to save between 5 and 10 percent of the costs currently being assumed under the leased telecommunications services program. Is that still your estimate, and are any of those savings reflected in the fiscal year 1994 budget?

[The information follows:]

Our estimate of a 5 to 10 percent channel savings is still valid. Some savings will be realized in fiscal year 1994 as channels are transitioned to LINCS, but savings will be offset by implementation costs until the network is completed.

LEASED TELECOMMUNICATIONS SERVICES

Mr. CARR. Please update the table on leased services shown on pages 530-532 of last year's hearing record.

[The information follows:]

FY 93 Leased Telecommunications
(Cost by Environment)

1. Enroute Data Services:	
BDAT--Enroute Beacon Digitized Data	\$31,991
RDAT--On Route Radar Digitized Data	547,108
ENAV--Enroute Navigational Aids	6,345,825
ERAD--Enroute Broadband Radar	10,939
ESEC--Enroute Broadband Secondary Radar	0
IDAT--Interfacility Data	358,825
	<u>\$7,294,688</u>
	=====
2. Enroute Voice Services:	
CFCSS--Central Flow Control Service	\$1,700,837
ECOM--Enroute Communications	21,610,155
ESYS--Enroute Equipment Systems	21,742,713
SVFA--Interphone Service F(A)	5,522,385
SVFB--Interphone Service F(B)	17,832,007
	<u>\$68,408,097</u>
	=====
3. Terminal Data Services:	
FDAT--Flight Data Entry and Printout (FDEP) and Flight Data Service	\$491,143
RTAD--Remote Tower Alpha Display	0
RTRD--Remote Tower Radar Display	311,774
TARS--Terminal Automated Radar Service	0
TRAD--Terminal Radar Service	796,134
TSEC--Terminal Secondary Radar Service	169
TNAV--Terminal Navigational AIDS	962,378
VNAV--Visual Navigational AIDS	108,665
	<u>\$2,670,263</u>
	=====
4. Terminal Voice Services:	
ATIS--Automatic Terminal Information Svc	\$31,785
SVFC--Interphone Service F(C)	4,482,013
TCOM--Terminal Communications	3,141,024
TSYS--Terminal Equipment Systems	31,282,412
	<u>\$38,937,234</u>
	=====

5. Flight Service Station/Weather Data Svc:	
AFTN--Aeronautical Fixed Tels. Network	\$137,308
AWOS--Automatic Weather Observation Sys	717,049
FSAD--Flight Service Automated Data	0
LABS--Leased A B Service	14,803,307
METI--Meteorological Information	2,292,544
NFAX--National Facsimile Service	178,186
DFAX--Digital Facsimile Service	159,348
RWDS--Remote Radar Weather Display Svc	2,104,793
SVCA--Service A	317,606
SVCB--Service B	75,120
SVCO--Service C	46,704

\$20,831,965

6. Flight Service Station/Weather Voice Svc:	
DIRF--Direction Finding	\$1,411,460
EFAS--Enroute Flight Advisory	2,002,561
FCOM--FSS Radio Voice Comms	10,724,215
FSYS--FSS Equipment Systems	6,697,963
PBRF--Pilot Briefing	2,818,680

\$23,654,879

7. Communications Utilities Data Svc:	
ADIN--Autodin Service	\$1,224,603
DMN --Data Multiplexing Network	9,774,843
NAMS--NADIN Message Processing Service (NADIN 1A)	733,792
NACB--NADIN II Dial Back-Up Circuits	620,579

12,353,817

8. Communications Utilities Voice Svc. Enroute Data Services:	
AVON--Autovon Service	\$1,441,881

\$1,441,881

9. Other Data Services:	
ADDA--Administrative Data	\$233,537
MNTC--Maint. Monitoring Systems; Remote Maintenance Monitoring Sys (RMMS), Maintenance Monitoring Systems (MMS)	1,382,165

\$1,615,702

10. Other Voice Services:

CCCC--Staff Communications	\$1,601,133
ADSY--Administrative Equip. Sys	8,178,517
ADVO--Administrative Voice	13,500,000
EVCS--Emergency Voice Comm. System	386,740
ETN---Electronic Tandem Network	418,069
MISC--Miscellaneous	28,223,017
NRCS--National Radio Comms. System	100,316
SVFD--Interphone Service F(D)	3,755,274
TRNG--Training	181,388

\$56,344,474

\$233,553,000

Subtotal

Contracts:

ARINC	\$13,471,000
Other Contracts	37,161,000
Administrative Telecommunications	39,211,000

\$ 89,843,000

Subtotal

TOTAL

\$323,396,000

DIRECT USER ACCESS TERMINAL (DUAT)

Mr. CARR. Your budget proposes to save \$11,000,000 in operating expenses by charging general aviation users for the direct user access terminal. Is this solely due to budget constraints, or are there other reasons which led you to this decision?

[The information follows:]

The proposal to eliminate the DUAT subsidy is based in part on current and future leased telecommunications budget constraints, and in part on our belief that the subsidy is duplicative. We believe that elimination of DUAT will have minimal operational impact while saving the government \$11,000,000. We based this on the fact that 85% of the pilots who used DUAT also called an Automated Flight Service Station (AFSS) prior to flight.

Automated Flight Service Stations (AFSS) can be accessed by calling an 800 toll-free telephone service or by a local telephone call. Three are currently 59 AFSS's in operation with the final two to be commissioned in FY 1994. The AFSS's are equipped with integrated communications switching that route telephone calls to the next available briefer as users call the AFSS. Should the number of incoming calls exceed an individual AFSS's capacity, calls can be rerouted to other stations. Recent data show that the average call wait time for pilots calling the AFSS is less than 30 seconds, and ranges from as low as 6 seconds to about 45 seconds at the busiest AFSS. FSS's and AFSS's have an advanced computer system that indicates the number of calls waiting and allows off-loading calls to a less busy facility.

BASIS FOR DUAT SAVINGS

Mr. CARR. How did you arrive at the savings of \$11,000,000?

[The information follows:]

The \$11,000,000 savings is the actual annual recurring leased telecommunications cost for the DUAT services.

ALASKAN NAS INTERFACILITY COMMUNICATIONS SYSTEM (ANICS)
REQUEST

Mr. CARR. On page 80, you state that costs for new telecommunications systems are included in the operations appropriation once new systems are put in place. However, you are requesting a base increase of \$2,262,000 for a ANICS even though on page 81 it appears that even the initial phase of this system will not be fully implemented until September 1994. Are these operating funds premature? Exactly what activities will be funded?

[The information follows:]

The primary objective in FY 1994 for ANICS is to deploy the Phase 1A locations, (4 hubs, 11 remotes and the Network Monitor and Control System) which represent the locations required to provide minimum acceptable air traffic control capability in the event of catastrophic failure. To minimize cost of deployment of the ANICS Program, the deployment schedule intermixes installation of some Phase 1B locations, which are in the proximity of Phase 1A locations, so that equipment can be shipped via one barge or aircraft and installation crews can install as many sites in one trip as possible. The ANICS master schedule contains as many as 39 locations which could be installed by the end of FY 1994. The deployment scenario will be solidified once a contractor is selected in the third quarter of FY 1993.

Actual deployment of the test sites and portable and mobile earth station systems will take place in CY 1993. Anchorage ARTCC installation and a phased deployment of remote locations will begin early in CY 1994. The Network Control Center will need to be manned and in full operation beginning with the first cutover. Therefore, operations and maintenance costs as well as satellite transponder leased costs will be incurred beginning as early as late CY 1993. Operations costs associated with re-routing of tail circuits, providing diverse tail circuits where required, basic termination liabilities, and/or aid to construction costs for tail circuit connectivity will be incurred in CY 1993.

AVIATION REGULATION AND CERTIFICATION (AVR) WORKLOAD

Mr. CARR. Your workload data on page 88 indicates that, after fairly large increases between 1991 and 1992, you are projecting decreases in workload for the two years between 1992 and 1994. However, I noticed that only 1991 and earlier data are actuals. Data for 1992 through 1994 are estimates. What would cause the workload to go down, after a year of significant growth?

[The information follows:]

The public service indicators used by the Aircraft Certification Service are not meant to be indicators of workload. Rather, they were developed as a part of the Service's Total Quality Management program to measure the amount of service provided to the public for the resources provided by Congress. They do not accurately measure activity (work hours)—they measure completed products, which have varying amounts or work hours attached to each product. Since the public service indicators do not measure the amount of work at our doorstep but the amount of completed products we deliver each year, they fluctuate with the amount of resources we are provided by Congress and the complexity of the projects we are asked to undertake. In that regard they are lagging indicators. We just completed staffing standards for the Service which will be used to measure the amount of resources needed to complete the projects that we have on our books. Without a background of historical data, these staffing standards can not yet be used to produce staffing trends to assist in predicting near-term future resource needs. We have begun to automate the gathering of staffing standards data, as well as annual public service indicators. This will bring additional credibility to the numbers.

To produce credible leading indicators of workload, the Service has begun to investigate the possibility of using well established, public indicators of the economic health of the nation and relate those to the products and services of the Service. We anticipate the need for outside contractor assistance for this effort and the timing of the completion of the project is driven by the availability of resources. We would like to be able to reliably predict the amount of certification activity we can expect 3-5 years in advance so as to posture our budget needs and resource availability as necessary to meet the future demand for our services.

The workload data that is historically submitted with our budget submissions comes from the National Program Tracking and Reporting Subsystem (NPTRS). Based on analysis of NPTRS data in FY 1991 significant system changes were implemented in this database in FY 1992 to improve the entering and recording of aviation safety inspector activity. These improvements have contributed greatly to the significant increases seen between FY 1991 and FY 1992. The economic conditions experienced by all facets of the economy in FY 1992 and continuing through the current fiscal year have contributed to the lack of any appreciable growth in these workload indicators.

BUDGET IMPACT ON AVR WORKLOAD INDICATORS

Mr. CARR. Are your workload indicators driven by the available budget? In other words, are they based not on the work needing to be done, but on the amount of work you plan to do given current budget assumptions?

[The information follows:]

The public service indicators are lagging indicators that reflect the reality of the resources provided. They do not, by their nature, indicate the amount of work needing to be done. Our staffing standards better reflect the amount of work needing to be done. The reduction in service indicators for the next 2 years is a reflection of our expected reduction in resources.

The estimated workload indicators are derived by analyzing previous years workload from the NPTRS and factoring in both economic projections for the aviation industry and the overall economy as well as current budget assumptions. A major assumption made in deriving the out year estimates of workload was that the field inspector work force would continue to decline as it has since FY 1991. This contributed to the lack of growth shown between FY 1993 and FY 1994.

INCREASE IN DESIGN APPROVALS FOR NEW AIRCRAFT PARTS

Mr. CARR. Design approvals for new aircraft materials, parts and appliances are undergoing rapid growth, from 3,566 in 1991 to an estimate of 6,593 in 1994. What accounts for such growth?

[The information follows:]

Parts Manufacturer Approval (PMA) accounts for the substantial growth over the next three years and in future years to come. As a result of its activities on unapproved parts the FAA uncovered the fact that supplier of parts to production approval holders were shipping these parts to the end user without proper approval. None of these parts are considered to be unsafe. As a result, the FAA has initiated a program to assist these suppliers in obtaining PMA approvals and thereby legitimizing direct shipment to the end user. This emphasis is expected to significantly increase the number of PMA approvals granted in the next few years.

PROPOSED ELIMINATION OF AVR POSITIONS

Mr. CARR. Please list, by title, grade and salary, each of the 72 FTP positions proposed for elimination in the aviation regulation and certification area for fiscal year 1994.

[The information follows:]

Number	Title	Grade	Average salary
3	Manager.....	GM-15	\$68,829
33	Aviation Safety Inspector	GS-13	54,308
6	Engineer	GS-14	60,403
4	Aviation Safety Inspector	GS-14	60,403
8	Program Analyst	GS-14	64,179
2	Program Analyst	GS-12	45,670
1	Management Analyst.....	GM-14	56,627
4	Secretary (Typing)	GS-06	21,800
11	Clerk Typist.....	GS-06	23,167

Note: Position reductions will be achieved from both unoccupied positions and positions which may become vacant due to attrition. Attrition losses can only be estimated, therefore, actual losses may vary from the estimate.

FAA AIRCRAFT AND OPERATING COST

Mr. CARR. Please update the tables on FAA aircraft and operating costs shown on page 547 of last year's hearing record.

[The information follows:]

	Fiscal years		
	1992	1993	1994
Number of aircraft (EOY)	59	58	56
Estimated operating cost:			
Operations direct.....	73,700,000	80,455,000	78,074,000
Facilities & equipment.....	44,385,000	126,000,000	49,900,000
Total operating cost.....	118,085,000	206,455,000	127,974,000

FULL-TIME PILOTS AND SALARY COST

	Fiscal years					
	1992		1993		1994	
	Num- ber	Amount	Num- ber	Amount	Num- ber	Amount
Operations	93	5,051,140	86	5,150,720	86	5,173,345
R&D	9	558,376	9	580,160	9	582,709
Facilities & Equipment ¹	6	314,220	5	292,139	5	293,852
Total	108	5,923,736	100	6,023,019	100	6,049,906

¹ Represents cost of flight inspections of various airway facilities.

DROP IN FLIGHT INSPECTION HOURS

Mr. CARR. On page 100, you are estimating a drop in flight inspection hours even though you are planning to commission significant numbers of new equipment requiring flight inspections. For example, you are planning to commission 362 new navigation and landing aids in fiscal year 1994. Does the cut in flight hours call into question your commissioning estimates and therefore your maintenance request for those items?

[The information follows:]

The initial commissioning flight check for new NAS facilities is funded under the F&E appropriation. Once commissioned, the periodic rechecking of those facilities is accomplished under operations workload. Facilities commissioned in fiscal year 1994 will become operations workload in the next fiscal year. Flight inspection hours take a slight dip to reflect the current services level of funding.

DECREASE IN NUMBER OF PHYSICAL EXAMINATIONS

Mr. CARR. Compared to your fiscal year 1991 actual data, you are estimating big decreases in the numbers of physical examinations performed, both by in-house staff and by aviation medical examiners. Why is this?

[The information follows:]

The 1994 estimates are based on the actual FY92 figures which total 26,169 physical examinations conducted. The FY94 estimate is 26,200 total physicals, with a slight shift from the number conducted by in-house staff to out of agency Aviation Medical Examiners (AME). This is the result of a decrease in the number of Medical Field Offices that have qualified personnel on staff to conduct physical exam services.

FAA COST TO REVIEW INDUSTRY DRUG PLANS

Mr. CARR. Your workload indicators show that you expect to review 4,600 anti-drug plans as part of the aviation industry drug program in fiscal year 1994. This is up from 600 the year before. What is the total cost to the FAA of this additional workload?

[The information follows:]

The 4,600 plans projected to be reviewed in Fiscal Year 1994 include the 600 anti-drug plans which the FAA expects to receive based on prior years and 4,000 alcohol misuse prevention program plans which aviation employers will be required to submit to the FAA under regulations implementing the alcohol misuse provisions of the Omnibus Transportation Employee Testing Act of 1991. Rulemaking activity to implement the provisions of this statute is currently underway. The timing of the resulting workload will be dependent on when the final rule is effective, but we an-

ticipate the 4,000 alcohol misuse plans will be submitted in the first year of this new program.

Implementation plans for the new program are still at an early stage pending the final rulemaking. No additional resources are being requested for reviewing the plans. Consequently, existing FAA staff will be used to the maximum possible extent and will be diverted from other activities, as necessary, during the peak plan review periods.

Our preliminary estimate is that a total of 2 staff years (at the equivalent of grade GS-13) will be required for the effort in Fiscal Year 1994. The actual additional costs, which we estimate at \$13,500, will result from overtime pay, as well as travel and per diem costs for regional employees who will be required to assist headquarters in the review of the alcohol plans.

CLEVELAND CLINIC FOUNDATION

Mr. CARR. In the fiscal year 1993, DOT Appropriations Act, \$500,000 was provided for a study of pilot error at the Cleveland Clinic Foundation. What is the status of the work today, and when will the work be completed?

[The information follows:]

In accordance with Federal procurement regulations, the proposed contract to perform a study of human factors involved in pilot error has been synopsized and announced in the Commerce Business Daily. An award date in July is anticipated. An advance statement of work has been provided to the Cleveland Clinic Foundation to formulate a proposal for the accomplishment of work. The statement of work specifies 360 days from the date of award for completion of all work.

CIVIL AVIATION SECURITY POSITIONS

Mr. CARR. Last year, you advised us that only 824 of your 1,031 authorized security positions were filled. Why is your onboard rate so low, and has it improved since last year.

[The information follows:]

Yes, we have improved, the on-board employment rate reported during the Congressional Hearings reflected our mid-year employment, not the end-of-year. The rate reported at mid-year mirrored our even-flow hiring policy for security agents. The actual end-of-year employment was 852, for FY 1992, which equates to 97 percent of the Agency's goal for end-of-year employment and 83 percent of the authorized positions.

1991 IG REPORT ON THE SECURITY WORKFORCE

Mr. CARR. What progress have you made since last year in implementing the recommendations of a 1991 Inspector General report regarding the FAA's security workforce?

[The information follows:]

The IG recommendations pertained to private contract security guards and the need for FAA to establish uniform guard standards and provide more effective oversight of guard contractor compliance. The IG recommended that draft FAA Order 1600.6C, Physical Security Management Program, be implemented as soon as possible since it addressed both areas of concern. Order 1600.6C was signed on April 16 and established uniform contract security guard standards as well as procedures for FAA security oversight of the preparation and implementation of contracts for security guard services.

AVIATION SECURITY TABLES

Mr. CARR. Please update the aviation security tables shown on pages 549-550 of last year's hearing record.

[The information follows:]

CIVIL AVIATION SECURITY COMPLIANCE AND ENFORCEMENT ACTIONS

U.S. AIR CARRIERS

	1986	1987	1988	1989	1990	1991	1992
WARNINGS	439	489	791	158	104	155	1,021
LETTERS OF CORRECTION	156	140	124	51	79	64	95
NON-ENFORCEMENT ACTIONS	79	107	214	215	144	172	196
CIVIL PENALTIES	83	160	196	78	69	129	184
AMOUNT ASSESSED	\$122,221	\$340,850	\$296,735	\$95,518	\$252,550	\$378,417	\$4,285,028
INVESTIGATIONS INITIATED	1,230	1,344	2,130	1,221	845	612	764
INVESTIGATIONS CLOSED	757	896	1,325	456	396	520	1,524
INVESTIGATIONS PENDING	362	1,262	2,279	2,579	3,068	3,227	2,467

FOREIGN AIR CARRIERS

	1986	1987	1988	1989	1990	1991	1992
WARNINGS	8	17	31	12	4	6	15
LETTERS OF CORRECTION	13	9	30	3	1	1	4
NON-ENFORCEMENT ACTIONS	6	5	4	2	14	1	13
CIVIL PENALTIES	0	2	1	4	1	5	16
AMOUNT ASSESSED	\$0	\$26,000	\$1,800	\$11,500	\$750	\$6,785	\$21,770
INVESTIGATIONS INITIATED	46	88	60	29	27	4	33
INVESTIGATIONS CLOSED	27	33	67	19	20	13	50
INVESTIGATIONS PENDING	13	55	104	68	70	62	45

AIRPORTS

	1986	1987	1988	1989	1990	1991	1992
WARNINGS	60	46	46	31	25	31	57
LETTERS OF CORRECTION	27	32	49	32	42	56	47
NON-ENFORCEMENT ACTIONS	22	28	15	32	27	29	27
CIVIL PENALTIES	15	26	56	14	28	79	75
AMOUNT ASSESSED	\$16,950	\$28,650	\$53,750	\$89,367	\$108,050	\$108,200	\$110,300
INVESTIGATIONS INITIATED	200	235	348	322	193	132	181
INVESTIGATIONS CLOSED	124	132	166	108	122	195	215
INVESTIGATIONS PENDING	58	258	451	595	612	565	531

INDIVIDUALS

	1986	1987	1988	1989	1990	1991	1992
ADMINISTRATIVE CORRECTION	1,430	2,158	1,044	242	289	321	634
NON-ENFORCEMENT ACTIONS	238	264	245	221	181	279	300
CIVIL PENALTIES	391	449	618	765	533	899	1,210
AMOUNT ASSESSED	\$129,292	\$183,770	\$258,218	\$104,496	\$429,844	\$765,675	\$949,802
INVESTIGATIONS INITIATED	2,909	3,089	2,635	2,507	2,386	1,897	3,237
INVESTIGATIONS CLOSED	2,059	2,871	1,907	648	1,003	1,499	2,582
INVESTIGATIONS PENDING	813	3,360	3,701	4,590	5,583	5,977	6,632

NOTES ON 1992 C&E STATISTICS

- (1) Warnings will be higher throughout because previous runs of this report did not include both Warning Letters and Warning Notices... it just included Notices. Letters were added as a valid final action type several years ago.
- (2) Dramatic increase in US Carrier civil penalty is from a single ANM case against Continental that was a consolidation of many individual cases. The civil penalty for that case alone was \$3.5 million dollars.
- (3) The large number of US Carrier cases closed can be attributed to the change in test object policy that lets ACS close the case administratively rather than automatic referral to Legal for Civil Penalty.
- (4) The dramatic increase in Individual cases between 1991 and 1992 can be explained by the more stringent security measures in effect during Desert Storm in 1991 where curbside check-in was prohibited and only ticketed passengers were allowed through checkpoints and overall passenger traffic was down.

CIVIL AVIATION SECURITY AIRLINE PASSENGER SCREENING RESULTS

	1986	1987	1988	1989	1990	1991	1992
PERSONS SCREENED (MILLIONS)	1,055.20	1,095.60	1,054.90	1,113.30	1,145.10	1,012.00	1,306.00
WEAPONS DETECTED:							
FIREARMS	3,241	3,252	2,773	2,879	2,853	2,159	2,573
(1) HANDGUNS	2,981	3,012	2,591	2,397	2,490	1,858	2,213
(2) LONG GUNS	146	99	74	92	59	61	51
(3) OTHER	114	141	108	390	304	240	283
EXPLOSIVES/INCENDIARY DEVICES	11	14	11	26	15	70	26
PERSONS ARRESTED:							
FOR CARRIAGE OF FIREARMS/EXPLOSIVES	1,415	1,581	1,493	1,436	1,334	900	1,259
FOR GIVING FALSE INFORMATION	89	81	222	83	18	28	13

POSITION REDUCTIONS AT THE TECHNICAL CENTER

Mr. CARR. Even though the FAA as a whole is reducing total full time permanent positions by 1,486 between fiscal year 1993 and 1994, staffing at the FAA Technical Center is being raised from 1,542 FTP to 1,558. Why shouldn't the Technical Center bear a proportionate share of the overall reduction in staffing?

[The information follows:]

The Technical Center should bear a proportionate share of the overall reduction in staffing. The numbers identified in FAA's Congressional budget, on page EX-9 are not correct. Following are the corrected numbers:

FEDERAL AVIATION ADMINISTRATION
Technical Center

	FY 1993 ENACTED		FY 1994 REQUESTED	
	Positions	Amount	Positions	Amount
<u>OPERATIONS:</u>				
System Maintenance				
Operational Support Services	398	33,766,900	396	39,625,900
Leased Communications	0	600,800	0	591,100
Subtotal	398	34,367,700	396	40,217,000
Medical	4	60,000	4	60,000
Chief Counsel	7	537,800	7	557,400
Civil Aviation Security	6	264,200	6	270,000
Technical Center Operations				
NAS Design and Management	160	24,348,000	160	26,348,200
Human Resource Management	24	1,747,000	24	1,655,000
Direction, Staff and	37	3,049,200	37	2,968,000
Supporting Service				
Subtotal	221	29,144,200	221	30,971,200
OPERATIONS - TOTAL	636	64,373,900	634	72,075,600
<u>FACILITIES AND EQUIPMENT:</u>				
Test Facilities and Improvements	388	53,886,000	388	57,177,000
<u>RESEARCH, ENGINEERING AND</u>				
<u>DEVELOPMENT:</u>				
Conduct of test and evaluation (R,E&D)	406	102,080,000	405	108,891,000
Total Program, Technical Center	1,430	220,339,900	1,427	238,143,600
<u>Distribution by Appropriation</u>				
Operations	636	64,373,900	634	72,075,600
Facilities and Equipment	388	53,886,000	388	57,177,000
Research, Engineering and Dev.	406	102,080,000	405	108,891,000
TOTAL	1,430	220,339,900	1,427	238,143,600

INCREASED UTILITY AND SPACE MAINTENANCE COSTS

Mr. CARR. Why can't the additional \$3,000,000 needed for such things as increased utilities costs and space maintenance costs be accommodated within the extra funding being requested elsewhere for inflationary increases?

[The information follows:]

The \$3,000,000 identified the total program increases for the NDM activity. The funds provide the following: \$1,207,000 for utilities at the Technical Center, \$699,000 for the Technical Center's Operations and Maintenance (COMS) Contract, and \$1,094,000 for the comprehensive management and direction for the timely acquisition, deployment and installation of the increasing number of major systems scheduled for handoff to operational status in the mid-1990's.

The increases for utilities and COMS contract, both for the Technical Center, are for 4 buildings (54,900 sq. ft.) that become operation in mid-1993, 1 at the end of 1993 (185,000 sq. ft.), and another anticipated in mid-1994 (3,600 sq. ft.). The total square footage equals 243,500 sq. ft. Some of the square footage shown as part of the beginning FY 1993 base was unoccupied space and would, therefore, not consume utilities at the same rate as occupied space. This increase will provide the required service for the new buildings.

The inflationary increase you inquired about addresses only the amounts appropriated to cover the anticipated annual price increases to operate at a current services level. This increase is to support additional square footage.

UTILITY INCREASE AT THE TECHNICAL CENTER

Mr. CARR. One of these items is a 19 percent increase in funding for utilities at the Technical Center (from \$6,415,000 to \$7,622,000). What justification can you provide for such a large increase?

[The information follows:]

The Technical Center is requesting a \$1,207,000 for utilities. This utility funding increase is based on an increase of 243,500 square feet associated with the following new facilities:

	<i>Square Ft.</i>
AAS lab	185,000
Aviation security lab	27,000
Human factors lab	16,000
Aircraft component test lab	8,600
Mode S and ASR-9 support lab	3,600
Building 201 annex	3,300
Total, square feet	243,500

As a result of the new facilities identified above, the Technical Center square footage is increasing by 22 percent. Total investment in the construction of these facilities amounted to \$42,400,000 in combined Facilities and Equipment (\$37,200,000) and Research, Engineering and Development (\$5,200,000) funds. Without the utility increase, these new facilities will be unable to operate as scheduled in FY 1994. Some of these facilities had partial occupancy in FY 1993, thus a small portion of the increase arises from the annualization of their FY 1993 operating costs; i.e., the new AAS Lab is scheduled for occupancy by September 1993, but will not reach peak occupancy until after FY 1994. The bulk of the increase, therefore, covers increased consumption from their scheduled occupancy in FY 1994; and normal annual rate increases. These increases can be more accurately described as mandatory increases without which the new facilities cannot operate.

INCREASES FOR MANAGEMENT AND DIRECTION

Mr. CARR. Another item is an increase of \$1,094,000 for management and direction of NAS plan acquisitions and installations. Please explain in more detail exactly why these funds are needed, and why it is important to increase funding for this particular area of administrative activity when many others are being reduced.

[The information follows:]

The following explains the need to increase funding for the management of acquisition, deployment, and installation of increasing number of major systems scheduled for handoff to operational status beginning in the mid-1990's:

a. Transitioning of additional programs such as the Aircraft Acquisition Program, Aeronautical Data Link, Stand Alone Training Systems Program, the new limited consolidation concept for en route centers and terminal radar approach controls, etc.

b. Military base closures have created an uncertainty in the future NAS configuration and have caused a workload increase. The agency must now determine the impact on the FAA because of the possible reconfiguration of the NAS caused by closing former military facilities, and how to manage in light of these closures.

These additional programs require funds to provide proper management oversight and ensure that the systems are purchased, installed, and operational on schedule and within budget.

INCREASE FOR NASAO CONTRACT

Mr. CARR. You are requesting a 25 percent increase (from \$1,395,000 to \$1,756,000) in funding for the National Association of State Aviation Officials (NASAO) contract. Please tell us why this contract is expected to rise so much in a single year.

[The information follows:]

In FY 1993 the NASAO Center for Aviation Research and Education (NASAO-CARE) received \$1,345,000 to inspect and collect data used by the Federal government in various flight publications and charts. The actual amount negotiated in the contract for FY 1993 was \$1,780,000. However, limited funds made it necessary to contract for the lower amount. The impact of the lower amount was that some of the airports scheduled for inspection under the higher amount will not be inspected.

UNDERUTILIZED AIRPORTS

Mr. CARR. Please update the listing of the underutilized airports shown on page 369 of last year's hearing record.

[The information follows:]

A Preliminary List of Airports Located Near the 23 Delay-Problem Airports

Delay-problem Airport ²		Supplemental Airport	Delay-problem Airport ²		Supplemental Airport
Atlanta Hartsfield	ATL	Athens Macon Columbus (100 mi) Chattanooga, TN (100 mi)	Minneapolis	MSP	St. Paul (Downtown) Mankato (60 mi) Rochester (77 mi) Eau Claire, WI (85 mi)
Boston	BOS	Manchester Pease International Trade Port Portland, ME Providence, RI Worcester Hanscom AFB	New York	JFK	Farmingdale Garden City Islip Long Island Stewart/Newburgh (60 mi) White Plains
Charlotte	CLT	Hickory Greensboro (90 mi) Greer, SC (90 mi) Winston-Salem (60 mi)	Newark	EWR	Trenton Stewart/Newburgh, NY (60 mi) White Plains, NY
Chicago O'Hare	ORD	Aurora Chicago Midway Meigs Field Rockford Waukegan West Chicago (Du Page) Wheeling Gary, IN Glenview NAS	Orlando	MCO	Daytona Beach Ft. Pierce (100 mi) Melbourne (60 mi) Tampa (70 mi) Vero Beach (90 mi)
Dallas-Ft. Worth	DFW	Carswell AFB Dallas-Love Field Denton Fort Worth Meacham McKinney Mesquite Waco (80 mi)	Philadelphia	PHL	Allentown Lancaster (70 mi) Reading (50 mi) Willow Grove NAS Trenton, NJ Wilmington, DE
Denver	DEN	Colorado Springs (80 mi)	Phoenix	PHX	Prescott (80 mi) Williams AFB
Detroit	DTW	Detroit City Flint Pontiac Lansing (80 mi) Toledo, OH (60 mi) Selfridge ANG Willow Run Windsor, Ontario, Canada	Pittsburgh	PTT	Johnstown Latrobe Morgantown, WV (60 mi)
Honolulu	HNL	Kailua	San Francisco	SFO	Concord Oakland San Jose Santa Rosa Moffett Field NAS Hamilton Field
Houston	IAH	Corpus Christi Ellington Galveston Houston Hobby Burbank Long Beach Norton AFB Ontario Oxnard Palmdale	St. Louis	STL	Scott AFB
Los Angeles	LAX	Ft. Lauderdale	Seattle	SEA	Everett/Paine Field McChord AFB
Miami	MIA		Washington	DCA	Baltimore, MD Hagerstown, MD (60 mi) Charlottesville, VA (100 mi) Richmond, VA (100 mi) Andrews AFB
			Washington	AD	Baltimore, MD Hagerstown, MD (60 mi) Charlottesville, VA (100 mi) Richmond, VA (100 mi) Andrews AFB

2. Airports having greater than 20,000 hours of delay for 1991 as reported by FAA Office of Policy and Plans.

JOINT-USE MILITARY AIRFIELDS

Mr. CARR. Please update the listing of military airfields with joint use agreements as found on page 372 of last year's hearing record.

[The information follows:]

JOINT USE AIRFIELDS

Air Force	Army	Navy	Marine Corps
AF Plant 42, Palmdale, CA	Libby AAF (Ft. Huachuca),	ALF Ford Island, Honolulu, HI	MCAS, Yuma, AZ.
Barter Island Dew Site, AK	Sierra Vista, AZ	NAS, Bermuda	
Charleston AFB, SC	Dillingham, Waialua, HI	NAS, Agana, Guam	
Dover AFB, DE	Sherman AAF, (Ft.		
Elgin AFB, Valparaiso, FL	Leavenworth), KS		
Pt. Lay Dew Site, AK	Grayling AAF, (Camp		
Rickenbacker ANGB,	Grayling), MI		
Columbus, OH	Blackstone AAF, (Ft. Pickett),		
Scott AFB, Belleville, IL	VA		
Sheppard AFB, Wichita Falls,	Sparta/McCoy AAF, (Ft.		
TX	McCoy), WI		
Westover ARB, Chicopee, MA			

Definition of Joint Use: An installation where written agreement between the military department and a local government agency authorizes use of the military runways for a public airport.

Pending Joint Use Agreements: Biggs AAF (Ft. Bliss) El Paso, TX, Phillips AAF (Aberdeen Proving Ground), MD, NAS Memphis, TN.

Note: There is commercial airline service at Forney AAF (Ft. Leonard Wood), MO, Polk AAF (Ft. Polk), LA, Camp Guernsey, WY, and Shemya AFB, AK, authorized by permit/lease.

AIRPORTS WITH CAPACITY PROBLEMS

Mr. CARR. Please also update the listing of airports with capacity problems as shown on page 374 of last year's hearing record.

[The information follows:]

AIRPORTS WITH AIR CARRIER DELAY IN EXCESS OF 20,000 HOURS

Annual Air Carrier Delay in Excess of 20,000 Hours					
Year 1991		Year 2001			
Chicago O'Hare	ORD	Chicago O'Hare	ORD	Salt Lake City	SLC
Atlanta	ATL	Dallas-Ft. Worth	DFW	Nashville	BNA
Dallas-Ft. Worth	DFW	Atlanta Hartsfield	ATL	Washington National	DCA
Los Angeles	LAX	San Francisco	SFO	Kansas City	MCI
Newark	EWR	Washington Dulles	IAD	Charlotte-Douglas	CLT
San Francisco	SFO	Newark	EWR	Cincinnati	CVG
Boston	BOS	St. Louis	STL	Honolulu	HNL
New York J.F.K.	JFK	Los Angeles	LAX	Houston	IAH
St. Louis	STL	Phoenix	PHX	Las Vegas	LAS
Phoenix	PHX	New York J. F. K.	JFK	Windsor Locks	BDL
Miami	MIA	Miami	MIA	Chicago Midway	MDW
Philadelphia	PHL	Philadelphia	PHL	Memphis	MEM
Washington Nat'l	DCA	Boston	BOS	Baltimore Washington	BWI
Pittsburgh	PIT	Detroit	DTW	Ontario	ONT
Detroit	DTW	Pittsburgh	PIT	Raleigh-Durham	RDU
Orlando	MCO	New York La Guardia	LGA	San Jose	SJC
Minneapolis	MSP	Orlando	MCO	Seattle-Tacoma	SEA
Charlotte	CLT	Minneapolis	MSP	San Diego	SAN
Denver Stapleton	DEN				
Honolulu	HNL				
Houston	IAH				
Seattle-Takoma	SEA				
New York La Guardia	LGA				

Note: 1. 23 airports for 1991 (the same group for 1990)

2. 36 airports for 2001 (dropping CLE, DAY, FLL, and TPA from the table for 2001)

AIRPORTS WORKLOAD—CONGRESSIONAL BRIEFING

Mr. CARR. Last year, you estimated 29,443,000 regional office hours for an activity called "Congressional briefing papers" under the airports program (p. 555). Please explain what this meant.

[The information follows:]

Please note that the estimated figure of 29,443,000 is in error. The correct figure of 29,443 man hours should have been printed in that chart.

Congressionals include the time spent in researching facts needed to answer United States congressional correspondence as well as preparation time to answer the questions raised or the report desired. Enormous inquiries are made directly to the Airports Division Regional offices about the status of grants.

Briefing papers include special reports and other items that may be "one-time-only" or recurring situations, which address current conditions of the Airport program.

FINANCIAL AND STAFFING RESOURCES

Mr. CARR. Please provide a breakdown of your financial and staffing resources for each of the offices funded under this appropriation for each of the fiscal years 1992-1994.

[The information follows:]

Direction, Staff, and Supporting Services

Financial and Staffing Resources

Authorized Positions
FY 1992 - 1994

REGION/CENTER/HQ	ACTUAL FY 1992	EST FY 1993	EST FY 1994	ACTUAL FY 1992	EST FY 1993	EST FY 1994
New England	20	37	37	3,382	2,930	3,027
Eastern	69	88	88	6,343	6,783	6,482
Southern	116	135	135	8,602	8,643	8,587
Southwest	71	83	83	4,937	5,061	5,165
Great Lakes	39	48	48	4,242	4,520	4,354
Central	62	78	78	5,105	5,277	4,968
Northwest Mountain	46	48	48	4,207	4,372	4,277
Western Pacific	106	107	107	7,734	7,299	7,022
Alaskan	45	55	55	4,773	5,052	4,845
REGION SUB-TOTAL	574	679	679	49,324	49,937	48,728
Aeronautical Center	187	266	266	23,703	23,545	23,154
Technical Center	43	37	37	3,276	3,049	2,969
CENTER SUB-TOTAL	230	303	303	26,979	26,594	26,123
AIT	0	55	55	39,007	39,441	40,443
International	7	32	32	8,583	11,954	11,840
ABU	0	0	0	2,146	1,826	1,865
AAA	34	30	30	2,732	2,741	3,079
DS&SS OTHER TOTAL	845	1,099	1,099	128,771	132,493	132,077
General Counsel	337	337	337	23,367	24,517	25,909
1 /						
TOTAL	1,182	1,436	1,436	152,138	157,010	157,986

1 / Reflects one time adjustment in FTP's to align authorized positions with onboard staff.

POSITION REDUCTIONS PURSUANT TO EXECUTIVE ORDER 12839

Mr. CARR. Please provide a chart detailing the position reductions for each of these offices being made pursuant to executive order 12839.

[The information follows:]

No full-time permanent (FTP's) positions were taken from the Direction, Staff, and Supporting Services (DS&SS) activity in the FY 1994 request. Congressional concerns on the staffing disparity within this account were raised during the past three FAA hearings. As we pointed out in last year's hearing (House Record page 556), there has been a discrepancy between authorized positions and on-board employment in this account and other support activities (i.e. NAS Logistics Support, etc.). We committed to making a "technical" correction to fix that.

FAA conducted a study this spring and realigned positions within the agency. Vacant positions, primarily associated with reduced Air Traffic Assistant employment were transferred to other organizations in order to bring authorized positions in line with current staffing. As a result of the study, DS&SS now has one authorized position for each onboard employee as of the time of the study.

Because we have recently made this technical fix we held DS&SS exempt from "position" cuts but did make the cuts called for by the Executive Order in terms of on-board staff and FTE's. FAA realigned positions in FY 1993 in those activities where there has been a discrepancy between FTP's and on-board staffing.

DS&SS POSITION REDUCTIONS

Mr. CARR. You maintenance workforce is being reduced by 412 full time permanent positions in fiscal year 1994; you aviation standards workforce is being reduced by 68. Yet on page 140 it appears that your workforce for Direction, Staff, and Supporting Services is being reduced only FTE, not if full time permanent positions. Why is this? Weren't the reductions called for in the executive order intended to be permanent ones?

[The information follows:]

No full time permanent (FTP) position reductions are being reflected for Direction, Staff, and Supporting Services (DS&SS). For a number of years there has been a discrepancy between number of positions and on-board staff (FTE's) in the DS&SS activity due primarily to "anticipatory" cuts related to A-76 studies. In addition, senior management level approved position growth in some areas such as information Technology, Legal, and contract specialists to meet require staffing needs. The reductions were never implemented but the "anticipatory" cuts were not restored. In last year's testimony (House Report, page 556), we committed to making a technical correction to fix that". As noted previously, we have recently made the technical fix.

OFFICE OF CHIEF COUNSEL SENIOR POSITIONS

Mr. CARR. The FAA estimates an end of the year employment level of 309 for the Office of the Chief Counsel for fiscal year 1994. Please provide a listing of the 25 most senior positions in this office, showing title, grade, and salary.

[The information follows:]

OFFICE OF CHIEF COUNSEL
SENIOR STAFF

<u>TITLE</u>	<u>GRADE</u>	<u>SALARY</u>
1. Chief Counsel	SES	(Vacant)
2. Deputy Chief Counsel	SES	\$107,300
3. Assistant Chief Counsel for International Affairs & Legal Policy	GM-15	\$ 79,932
4. Assistant Chief Counsel for Legislation	SES	\$ 97,400
5. Assistant Chief Counsel for General Legal Services	SES	\$101,800
6. Assistant Chief Counsel for Regulations	SES	\$107,300
7. Assistant Chief Counsel for Enforcement	GM-15	\$ 86,044
8. Assistant Chief Counsel for Litigation	SES	\$107,300
9. Assistant Chief Counsel for Procurement Legal	SES	\$107,300
10. Assistant Chief Counsel for Airports & Environmental Law	GM-15	\$ 85,480
11. Manager Program Management Staff	GM-15	\$ 68,829
12. Special Counsel to the Chief Counsel	GM-15	\$ 74,380
13. Assistant Chief Counsel Alaska Region	GM-15	\$ 86,589
14. Assistant Chief Counsel New England Region	GM-15	\$ 74,380

<u>TITLE</u>	<u>GRADE</u>	<u>SALARY</u>
15. Assistant Chief Counsel Southern Region	GM-15	\$ 86,589
16. Assistant Chief Counsel Southwest Region	GM-15	\$ 73,269
17. Assistant Chief Counsel Central Region	GM-15	\$ 74,380
18. Assistant Chief Counsel Great Lakes Region	GM-15	\$ 75,492
19. Assistant Chief Counsel Western-Pacific Region	SES	\$107,300
20. Assistant Chief Counsel Technical Center	GM-15	\$ 79,934
21. Assistant Chief Counsel Aeronautical Center	GM-15	\$ 86,589
22. Assistant Chief Counsel Eastern Region	GM-15	\$ 83,929
23. Assistant Chief Counsel Northwest Mountain Region	GM-15	\$ 84,006

The remaining 10 senior positions are Deputy Assistant Chief Counsel, GM-15, located in our regional offices.

INCREASE FOR DS&SS ACTIVITY

Mr. CARR. You are requesting an additional \$3,000,000 for increased costs for the Office of the Chief Counsel. Please explain these costs in detail, and in particular break down these costs by requirements for new caseload, inflation, cost of living increases, and other pay adjustment.

[The information follows:]

FAA is requesting a total increase of \$3,000,000 for all of the Direction, Staff, and Supporting Services activities. The request is for the following areas:

OFFICE OF THE CHIEF COUNSEL

Civil Penalty Assessment. The program was enacted by Congress in 1987 as a demonstration program and became permanent in August 1992 to promote efficiency in processing enforcement actions. Amendments to the Federal Aviation Act created a program under which the Administrator of FAA is authorized to impose civil penalties for violations of the Federal Aviation Regulations of \$50,000 and under. The program provides parties an opportunity for a hearing, on the record, under the Administrative Procedures Act with the Office of the Secretary of Transportation (OST) Office of Hearings Administrative Law Judges. The OST Office of Hearings has incurred an increased workload for scheduling and maintaining case status reports and increased costs for providing reporting services. The FAA has a reimbursable agreement with OST for costs incurred for the Civil Penalty Program that covers personnel compensation and benefits for 6 staff positions plus the overhead costs prorated according to the number of hours devoted to each operating administration's cases. The increase in this agreement is due to the rise in new cases, backlog case, inflationary cost, cost-of-living increases, and other pay adjustments, \$300,000.

OTHER DIRECTION, STAFF, AND SUPPORTING SERVICES

Regions—Civil Rights. The regional civil rights offices have incurred an increased workload due to the decreased complaint processing time imposed by the new regulation, 29 CFR Part 1614. To complete complaint processing within 180 days the regional civil rights offices need additional resources, \$500,000.

Departmental Accounting and Financial Information System (DAFIS). OST recovers the total operations/maintenance cost for the operation of DAFIS by billing each agency based on their share of the total transaction volume. The costs have increased steadily each year, \$1,350,000.

Phase II Overseas Expansion. Aviation activity is growing faster in the Asia-Pacific region than anywhere else in the world, and Singapore offers a compelling location for a regional office. Additional funds are needed for travel (TDY and PCS), transportation, rents, communications, utilities, other contractual services supplies, and office/computer equipment, \$350,000.

Foreign Administrative Assistance Support (FAAS). FAAS funds foreign affairs administrative and support services provided by the Department of State to FAA's personnel working in overseas locations. The FY 1993 cost have increased \$700,000 for FY 1992 and were \$300,000 more than budgeted, \$500,000.

Total FY 1992 Program Increases, \$3,000,000.

INCREASE TO PROCESS CIVIL RIGHTS CASES

Mr. CARR. Please also explain why you are requesting an additional \$500,000 for administrative costs relating to the processing of civil rights cases.

[The information follows:]

The implementation of the new regulation, 29 Code of Federal Regulation (CFR) Part 1614 on October 1, 1992 revised the manner that Federal agencies process administrative complaints and appeals of employment discrimination filed by Federal employees and applicants for Federal employment. The objective of Part 1614 is to promote greater administrative fairness in the investigation and consideration of federal sector Equal Employment Opportunity (EEO) complaints. The regulation seeks to accomplish that goal by limiting to 180 days the length of time in which the complaint is within the sole jurisdiction of the agency.

The number of regional formal/informal discrimination cases has steadily increased over the last several years. The backlog of processing cases has increased due to the shortening of the processing time frame. Failure to meet the new regulatory time frames can result in an adverse inference determination by the Equal Employment Opportunity Commission (EEOC), that is, a decision against the agency based on an assumption that the agency has something to hide by not responding in a timely manner.

The regional civil rights offices will have to use a variety of investigative and dispute resolution methods to complete complaint processing within 180 days. The additional requirements for the regional civil rights offices include supplies, computer hardware/software, travel (TDY and PCS), training personnel to use more efficient methods of complaint processing, and hiring of temporary staff and contractors to assist in processing the backlog of complaints.

FAA OVERSEAS STAFFING

Mr. CARR. Please provide a listing of all FAA personnel stationed overseas, by location, title, grade, and salary.

[The information follows:]

LIST OF FAA PERSONNEL STATIONED OVERSEAS

COUNTRY	PP-SER -GR	SALARY	TITLE
ARGENTINA	GM-1801-14	058515	PRINCIPAL SEC INSP
BELGIUM	GS-0080-14	056627	INTL SECURITY OFCR
BELGIUM	AD-0341 -00	044566	ADMINISTRATIVE ASST
BELGIUM	AD-0301-00	055707	TECHNICAL ASSISTANT
BELGIUM	GS-0301-14	073619	EXECUTIVE OFFICER
BELGIUM	GM-0301-15	083262	INTL LIAISON REPRES
BELGIUM	AD-0301-00	035812	ADMIN CLERK
BELGIUM	GS-0318-08	032710	SECRETARY (TYPING)
BELGIUM	AD-0322-00	035364	CLERK-TYPIST
BELGIUM	ES-0340-00	101800	DIRECTOR EAMEO
BELGIUM	GM-0340-15	086589	DEPUTY DIR EAMEO
BELGIUM	GS-0341-11	033623	ADMIN OFFICER
BELGIUM	GS-0341-11	034744	ADMINISTRATIVE OFCR
BELGIUM	GS-0855-14	067955	GENERAL ENGINEER
BELGIUM	GM-0861-14	063235	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	066069	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	068588	AEROSPACE ENGINEER
BELGIUM	GM-0861-14	069846	AEROSPACE ENGINEER
BELGIUM	GM-0861-15	086226	SUPV AEROSPACE ENGR
BELGIUM	GS-1825-14	064179	ASI OPS
BELGIUM	GM-1825-15	081781	MANAGER, SAFETY INSP
BELGIUM	GM-1825-15	079932	SUPV ASI
BELGIUM	GM-1825-15	079589	AVN SAFETY INSP MFG
BELGIUM	GS-2152-14	071731	ATC SPECIALIST
BELGIUM	GM-2152-15	086223	SUPV ATC SPECIALIST
BELGIUM	GM-2181-14	073619	FLIGHT TEST PILOT
BELGIUM	GS-0303-07	024988	STAFF ASSISTANT
BELGIUM	GS-1801-13	057502	AVN SECURITY SPEC
BELGIUM	GS-1801-13	051114	AVN SECURITY SPEC
BELGIUM	GS-1801-12	040298	AVN SECURITY SPEC
BELGIUM	GS-1801-13	049517	AVN SECURITY SPEC
BELGIUM	GS-1801-13	049517	AVN SECURITY SPEC
BELGIUM	GS-1801-13	047920	AVN SECURITY SPEC
BELGIUM	GS-1801-13	055905	AVN SECURITY SPEC
BELGIUM	GS-1801-13	052711	AVN SECURITY SPEC
BELGIUM	GM-1801-15	071049	SUPV CIV AVN SEC SP
BELGIUM	GM-1801-15	086589	SUPV AVN SECURITY SP
BELGIUM	GM-1801-15	085853	SUPV AVN SECURITY SP
BELGIUM	GM-1801-14	060403	CAS LIAISON OFFICER
BELGIUM	GM-1801-15	070250	SUPV AVN SECURITY SP
BELGIUM	GM-1801-14	058515	CAS LIAISON OFFICER
BAHAMAS	WG-4749-10	021016	MAINT MECH
BRAZIL	GM-0301-15	086589	FAA REPRESENTATIVE
FRANCE	AD-0318-00	038024	SECRETARY
FRANCE	GM-0301-15	086589	FAA REPRESENTATIVE
FRANCE	GM-1801-14	073619	CAS LIAISON OFFICER
WEST GERMANY	GM-0301-13	052711	A/C AVN MNT OFF
WEST GERMANY	GS-0318-05	018951	SECY (O/A)

WEST GERMANY	GM-0340-15	074380	MGR, FIFO
WEST GERMANY	GS-0341-11	042591	ADMIN OFF
WEST GERMANY	GS-0856-12	045670	L ELEC TECH
WEST GERMANY	GS-0856-11	036986	ELEC TECH
WEST GERMANY	GS-0856-12	047013	ELEC TECH
WEST GERMANY	GS-0856-11	042591	ELEC TECH
WEST GERMANY	GS-0856-12	047013	ELEC TECH
WEST GERMANY	GS-0856-11	039228	ELEC TECH
WEST GERMANY	GS-0856-11	036986	ELEC TECH
WEST GERMANY	GM-0856-13	059372	S ELEC TECH
WEST GERMANY	GS-1825-14	064179	ASI AW
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GS-1825-14	064179	ASI OPS
WEST GERMANY	GS-1825-14	060403	ASI AW
WEST GERMANY	GS-1825-14	064179	ASI AW
WEST GERMANY	GS-1825-14	062291	ASI AW
WEST GERMANY	GS-1825-14	056627	ASI AW
WEST GERMANY	GS-1825-14	056627	ASI AW
WEST GERMANY	GS-1825-14	062291	ASI OPS
WEST GERMANY	GS-1825-14	060403	ASI AVIONICS
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GS-1825-14	069843	ASI OPS
WEST GERMANY	GS-1825-14	058515	ASI AW
WEST GERMANY	GM-1825-15	076602	SUPV ASI OPS
WEST GERMANY	GM-1825-15	086589	MANAGER, SASI
WEST GERMANY	GM-1825-15	066609	SUPV ASI AW
WEST GERMANY	GS-1910-11	041470	QL ASR SP AERO
WEST GERMANY	GS-2181-13	055905	ASIP
WEST GERMANY	GM-2181-14	060403	ASIP
WEST GERMANY	GM-2181-14	070161	ASIP
WEST GERMANY	GM-2181-14	058515	ASIP
WEST GERMANY	GM-2181-15	070032	S ASIP
WEST GERMANY	GS-0303-07	023474	ADMIN OFFICER
WEST GERMANY	GS-1801-13	047920	AVN SECURITY SPEC
WEST GERMANY	GM-1801-14	056627	CAS LIAISON OFFICER
ITALY	GM-0301-15	079563	FAA REPRESENTATIVE
ITALY	AD-0341-00	050599	ADMIN ASSISTANT
ITALY	GS-1801-12	041641	CIVIL AVN SEC INSP
ITALY	GS-1801-13	059099	AVN SECURITY SPEC
ITALY	GM-1801-14	056627	CAS LIAISON OFFICER
ITALY	GM-1801-15	068829	SUPV AVN SECURITY SP
JAPAN	GS-0301-12	041641	A/C AVN MNT OFF
JAPAN	GM-0301-15	085114	INTL AVIATION SPEC
JAPAN	GM-0340-15	081046	MGR, FIFO
JAPAN	GS-0341-11	042591	ADMIN OFF
JAPAN	GS-0856-12	042984	ELEC TECH
JAPAN	GS-0856-12	047013	ELEC TECH
JAPAN	GS-0856-11	033623	ELEC TECH
JAPAN	GS-0856-11	042591	ELEC TECH
JAPAN	GM-0856-13	049517	S ELEC TECH
JAPAN	GS-1910-11	038107	QL ASR SP AERO
JAPAN	GS-2181-13	062293	ASIP
JAPAN	GM-2181-14	056627	ASIP
JAPAN	GM-2181-14	062291	ASIP
JAPAN	GM-2181-14	064179	SUPV ASIP

JAPAN	GM-2181-14	056627	ASIP
JAPAN	GM-1801-13	051114	CAS LIAISON OFFICER
JORDAN	GM-0301-15	082523	FAA REPRESENTATIVE
SINGAPORE	GM-0301-15	081786	INTL AVIATION SPEC
SINGAPORE	GS-1825-14	064179	AV SAF INSP (AW) IFO
SINGAPORE	GS-1825-14	060403	AV SAF INSP (AW) IFO
SINGAPORE	GS-1825-14	060403	AV SAF INSP (OPS) IFO
SINGAPORE	GS-1825-14	062291	AV SAF INSP (AV) IFO
SINGAPORE	GS-1825-14	073619	AV SAF INSP (AW) IFO
SINGAPORE	GM-1825-15	077709	SUPV AV SAF INSP IFO
SINGAPORE	GS-1801-12	040298	CIV AV SEC SPEC
SINGAPORE	GM-1801-15	071049	SUPV CIV AV SEC SPEC
SINGAPORE	GM-1801-14	073619	CAS LIAISON OFFICER
SPAIN	FC-0340-13	083330	PROGRAM MANAGER
SPAIN	FC-0810-12	073269	AVIATION SYS ADVISOR
SPAIN	FC-0855-12	075489	ELECTRONICS ENGINEER
SPAIN	FC-0855-12	073269	ELECTRONICS ENGINEER
SPAIN	FC-2152-12	077709	AVIATION OPS ADVISOR
SPAIN	GM-1801-14	056627	CAS LIAISON OFFICER
THAILAND	GM-1801-14	069845	CAS LIAISON OFFICER
UNITED KINGDOM	GM-0301-15	082890	FAA REPRESENTATIVE
UNITED KINGDOM	GS-0318-07	025745	SECRETARY
UNITED KINGDOM	GS-1825-14	056627	ASI AW
UNITED KINGDOM	GS-1825-14	062291	ASI AW
UNITED KINGDOM	GS-1825-14	062291	ASI AW
UNITED KINGDOM	GM-1825-15	068829	SUPV ASI AW
UNITED KINGDOM	GM-1825-15	077712	SUPV ASI
UNITED KINGDOM	GM-1801-14	064181	CAS LIAISON OFFICER
VENEZUELA	GM-1801-14	058515	CAS LIAISON OFFICER
SAUDI ARABIA	FC-0340-12	086589	CHIEF TAG
SAUDI ARABIA	FC-1825-12	071049	AVN SAFETY INSPECTOR
SENEGAL	AD-D 318-00	005100	SECRETARY
SENEGAL	GM-0301-15	077712	FAA REPRESENTATIVE
SENEGAL	GS-1801-13	051114	CIVIL AVN SEC INSP
DENMARK	GM-1801-14	056627	CAS LIAISON OFFICER
AUSTRIA	GS-1801-13	049517	AVN SECURITY SPEC
AUSTRIA	GM-1801-14	062291	CAS LIAISON OFFICER
BAHRAIN	GS-1801-13	047920	AVN SECURITY SPEC
BAHRAIN	GM-1801-14	058515	CAS LIAISON OFFICER
INDONESIA	FC-0301-12	073269	INTL AVIATION SPEC

ESTABLISHMENT OF SINGAPORE REGIONAL OFFICE

Mr. CARR. You are requesting a base increase of \$350,000 to establish a regional office in Singapore. Why is a new FAA office needed in that location? Please provide relevant workload statistics to justify this expense.

[The information follows:]

Aviation activity is growing faster in Asia-Pacific than anywhere else in the world. Asia-Pacific airlines currently account for about 20% of the world market and should capture 25% by year 2000. Both ICAO and FAA studies project that the international passenger growth rate in Asia-Pacific will average twice the growth rate of anywhere else in the next few years. This region is a vital market for U.S. aviation firms, with U.S. manufactured aircraft comprising about 75% of total air carrier fleets in Asia-Pacific. Japan Airlines and All Nippon Airways are the largest purchasers of Boeing 747s and 767s, respectively. U.S. aerospace exports to Pacific rim almost doubled from 1985 to 1990, rising from \$5.8 to over \$10 billion. About 20% of commercial jet orders projected by 2005 are destined for the Asia-Pacific region. Finally, Asia-Pacific nations will likely spend nearly \$300 billion on air travel infrastructure in the 1990s.

FAA believes a regional location for safety, security, and representative personnel is vital if the FAA is to perform its regulatory duties, strengthen American leadership in aviation safety and security, and support U.S. firms' ability to compete. FAA has a large and growing workload in the region. In repair stations and line stations alone, the FAA has more than 70 foreign repair facilities and nearly 100 line stations to inspect. The FAA has more than 40 foreign airport security assessments as well in excess of 150 Part 129 and U.S. air carrier security inspections. Also, the FAA is involved in 42 technical assistance agreements with 12 countries in the Asia-Pacific area.

Creation of an Asia-Pacific regional office in Singapore like its counterpart office in Brussels for the Europe, Africa, and Middle East regions will: strengthen the integration of multiple FAA service organizations involved in overseas work; enhance the capacity to target and provide in a timely fashion region safety and technical support resources; provide on-site administrative support for FAA security, flight standards, and representative personnel in the region; and, foster effective communication and coordination of USG aviation policy in the region.

Singapore offers a compelling location for a regional office. Served by more than 50 international airlines, Changi Airport ranks in the top ten airports in the world in international passenger traffic and freight movements. U.S. firms export nearly \$1 billion worth of aviation products each year to Singapore. In 1990 alone, Singapore Airlines ordered 50 U.S. aircraft valued at about US \$8.6 billion. Numerous U.S. aviation manufacturing firms have large operations located in Singapore. Singapore ranks in the top five locations in the world for FAA certificate repair facilities (22). Whether measured in terms of airline service, passenger and freight traffic, aviation sector size, or receptivity to U.S. investment, Singapore represents a pivotal market and strategic location.

SAVINGS FROM NEW CWF SCREENING PROCESS

Mr. CARR. Can you quantify the savings resulting from the FAA's new screening process for controller candidates?

[The information follows:]

Previously, new controllers were hired and then attended 9 weeks of screening at the FAA Academy. Those who passed went on to receive the bulk of their training in their air traffic facilities. Using computer-based tests, we have shortened our screening process to about 1 week and generally made it pre-hire. We have redesigned the Academy training to reduce the training workload on the facilities. Those who attend the new training have already been screened. Therefore, we anticipate a much higher pass rate at the Academy. We do not need to send as many candidates as in the past in order to obtain any specific number of graduates.

FAA expects the annual cost of running the Air Traffic training program to be \$29.6 million in FY 1994. This is \$7.2 million less than the FY 1992 estimate of \$36.8 million, the last year we ran training under the old process. We expect our costs to remain in the \$30 million range for the foreseeable future.

FAA reflected program decrease was \$2.7 million savings in the FY 1993 request to Congress and an additional \$2.6 million in FY 1994 as a result of lower Air Traffic training costs. The remainder was reprogrammed into high priority training requirements. FAA does not expect any further savings.

MANAGEMENT TRAINING REDUCTION

Mr. CARR. According to the chart on page 153, virtually all categories of FAA training are being reduced in fiscal years 1993 and 1994 except management training. Why isn't management training being reduced also?

[The information follows:]

No decreases in management training are being proposed from the fiscal year 1994 enrollments. We have a number of important management development initiatives underway which are key to continuing to move the FAA culture towards greater empowerment, collaboration, and a quality orientation. As in the past, all new supervisors and managers are required complete mandatory training which enhances skills critical to success in their new managerial positions. Experienced supervisors and managers require training to teach them the new skills necessary to operate in the current and future environments.

In addition, we have begun and are expanding efforts to provide the workforce with diversity awareness training. Our next phase includes training in the skills needed to effectively manage a diverse workforce.

For the Federal Aviation Administration to keep pace with the multitude of changes facing the federal sector, systematic and targeted development is required. We foresee no decrease in our training needs in management and general training or, as a result, our projected enrollments.

UNIVERSITY CONTROLLER TRAINING PROGRAMS

Mr. CARR. Please update the data on the demographic and racial profile of controllers recruited through your university-based training programs as shown on page 353 of last year's hearing record.

[The information follows:]

MARC:

Employed to date.....	118
White Females	44
White Males.....	62
Native American Males.....	1
Black Females	1
Black Males	5
Hispanic Males.....	2
Asian American Females	1
Asian American Males	2
Community College of Beaver County:	
Employed to date.....	29
White Females	6
White Males.....	23

AVERAGE TRAINING COSTS PER ENROLLMENT

Mr. CARR. Please update the data on average cost per enrollment as shown on page 568 of last year's hearing record.

[The information follows:]

Fiscal year 1993 average cost per enrollment

Training program:	Amount
Air Traffic.....	\$11,900
Airway Facilities.....	3,100
Aviation Standards.....	5,400
Management/General.....	2,600
Airports/Logistics.....	1,100
Security.....	2,400

WORKERS' COMPENSATION PROGRAM

Mr. CARR. Please update the table on the workers' compensation program shown in page 570 of last year's hearing record.

[The information follows:]

Fiscal year change	Cost (thou- sands)	Change (thou- sands)	Percent change	Case	Case change	Percent change
1992	\$77,949	\$6,201	8.8	¹ 3,385	120	3.7
1991	71,748	1,648	-2.2	3,265	72	2
1990	73,395	8,398	12.9	3,193	14	0
1989	64,998	1,017	2	3,179	7	0
1988	63,980	2,615	4	3,172	-161	-5
1987	61,365	-3,788	-6	3,333	-117	-3
1986	65,153	599	1	3,450	-21	1
1985	64,554	5,241	9	3,471	13	0

¹ For fiscal year 1992 there were 407 claims not paid.

PERCENT INCREASED/DECREASED IN COSTS

	DOT (percent)	Government-wide (percent)
Medical	22.0	11.7
Compensation	7.0	9.1
Death benefits	11.6	8.0
Total costs	8.8	9.7

HEADQUARTERS ADMINISTRATION-FINANCIAL AND STAFFING RESOURCES

Mr. CARR. Please provide a breakdown of your financial and staffing resources for each of the offices funded under this appropriation for each fiscal years 1992-1994.

[The information follows:]

Headquarters Administration Staffing and Funding by Activity

662

	FTP				(\$000)	
	ACTUAL FY 1992	EST FY 1993	EST FY 1994		ACTUAL FY 1992	EST FY 1993
HEADQUARTERS ADMINISTRATION						
Administrator	51	54	54		4,907	4,913
Assistant Administrator for Civil Rights	15	16	16		1,358	1,509
Assistant Administrator for Public Affairs	30	37	37		3,429	2,447
Assistant Administrator for Government & Industry Affairs	14	14	14		750	855
Assistant Administrator for Information Technology	88	55	55		7,974	6,185
Assistant Administrator for Policy, Planning, and International Aviation	84	152	152		6,146	10,148
Assistant Administrator for Budget and Accounting	3	7	7			
Office of Budget	54	61	61		876	1,001
Office of Accounting	41	45	45		4,195	4,481
Executive Director for Systems Operations	9	9	9		2,488	3,010
Executive Director for System Development	10	15	15		768	1,152
Executive Director for Acquisition and Safety Oversight	23	38	38		934	949
ADMIN SUB-TOTAL	422	503	503		33,825	39,649
Associate Administrator for Aviation Safety	71	71	71		13,028	13,080
TOTAL HA	493	574	574		46,853	52,729
						52,230

HEADQUARTERS ADMINISTRATION
POSITION REDUCTIONS PURSUANT EXECUTIVE ORDER 12839

Mr. CARR. Please provide a chart detailing the position reductions for each of these offices being made pursuant to Executive Order 12839.

[The information follows:]

No Full-time Permanent Positions (FTP's) were taken from the Headquarters Administration activity in the FY 1994 Request. As you are aware, there has been a discrepancy between authorized positions and on-board employment in this activity as well as other support activities (i.e. Direction Staff and Support, NAS Logistics Support and NAS Design and Management).

FAA conducted a study this spring and realigned positions within the agency. Vacant positions, primarily associated with reduced employment in the Air Traffic activity were transferred to other organizations in order to bring authorized positions in line with current staffing. As a result of the study, Headquarters Administration now has one authorized position for each on-board employee as of the time of the study. In order to avoid recreating the discrepancy between FTP and on-board, management decided to take no position reductions in Headquarters Administration in FY 1994.

In addition, FAA senior management is currently looking at a variety of staffing scenarios designed to reduce staffing to the levels required by Executive Order 12839. The FY 1995 request will reflect those decisions, including any adjustments in the Headquarters Administration position levels.

HEADQUARTERS ADMINISTRATION POSITION REDUCTIONS

Mr. CARR. It appears that your workforce for Headquarters Administration is being reduced only in FTE's, not in full time permanent positions. Why is this? Weren't the reductions called for in the executive order intended to be permanent ones?

[The information follows:]

No full time permanent (FTP) positions are being taken in FY 1994. FAA realigned positions in FY 1993 in those activities where there has been a discrepancy between FTP's and on-board staffing. In order to avoid recreating the problem of a disconnect between authorized FTP positions and on-board staff, we chose not to reduce positions at this time. As a rule of thumb, FAA tries to maintain on-board staffing and FTE at 95% of authorized positions. Once staffing reaches that level, FAA will make FTP adjustments in Headquarters Administration in the FY 1995 request to Congress in line with the staffing reductions assumed in the FY 1994 budget.

POLICY STUDIES

Mr. CARR. Please list the policy studies you plan to complete during calendar year 1993 and those you actually completed during 1993, similar in format to the information shown on page 493 of last year's hearing record.

[The information follows:]

During calendar year 1993, the Office of Aviation Policy, Plans, and Management Analysis anticipates completing the following policy studies:

New establishment and discontinuance criteria for Loran-C approaches.

New establishment and discontinuance criteria for airport surface detection equipment.

New establishment and discontinuance criteria for precision runway monitor equipment.

Evaluation of airport noise restrictions submitted to the FAA under Part 161 of the Federal Aviation Regulations.

Studies of the impacts of selected airports noise and access restrictions on the national aviation system.

An update of critical economic values used in benefit/cost analyses of FAA systems and regulatory actions.

An update of appropriate benefit-cost procedures for use in conducting economic analyses of FAA systems and regulatory actions.

An economic evaluation of the appropriateness of charging user fees for FAA training provided to designated medical examiners.

An update of the annual projection of future airport delay.

In addition, the following staffing standards will be completed this calendar year: validation of Acquisition Support Unit staffing standards, Manufacturing Inspectors, Staffing standards for Safety (certification) Engineers and Flight Pilots.

Economic evaluation of approximately 98 rulemaking actions will be completed during CY 1993, dealing with such diverse areas as aircraft manufacturing and maintenance, aircraft operation, airspace allocation, security, airmen's standards, and prevention of mid-air collisions. Included will be analyses of proposed and final rules pertaining to alcohol testing of persons performing safety-sensitive functions, anti-drug programs, airport and aircraft security, runway incursions, aircraft noise, aircraft fires, aging aircraft, and several rulemakings harmonizing U.S. airworthiness standards with those of foreign aviation authorities.

During calendar year 1993, the following policy studies have been completed:

During the 4-month period ending April 30, 1993, 34 of the 98 economic evaluations discussed above were completed.

Staffing standards for Safety (certification) Engineers and Flight Pilots.

INFORMATION RESOURCES MANAGEMENT PLAN (IRMP) REQUEST

Mr. CARR. Last year, it was indicated that the total request for your information resources management plan, excluding personnel costs, was \$239 million. What is the total budget request for IRMP-related projects for fiscal year 1994?

[The information follows:]

The estimated fiscal year 1994 Information Resources Management Plan related costs, excluding personnel costs, is \$1.7 billion.

LISTING OF IRMP PROJECTS

Mr. CARR. Please provide a listing of your IRMP projects, including the amounts being requested and the account under which the funds are being requested, similar in format to that shown on pages 575-576 of last year's hearing record.

[The information follows:]

The following is a breakout of IRMP projects and estimated dollar amounts required in fiscal year 1994 to support these projects.

	Thousands	Appro.
Logistics and Inventory System	\$6,500	OPS/F&E
NAS Management Automation Program	10,000	OPS
System for Acquisition Management	1,600	OPS
Logistic Master Plan	1,000	OPS
Personal Property In Use Management	2,800	OPS
Comprehensive Personal Property System	1,300	OPS
National Aviation Safety Data Center Program	1,500	OPS
Telecommunications Information Management System (TIMS)	5,858	OPS
Voice Telecommunications Systems	5,000	OPS
Administrative Telecommunications	84,015	OPS
Administrative Data Transmission Network (ADTN)	18,258	OPS
Consolidated Uniform Payroll System	1,385	OPS
Consolidated Personnel Management System	1,077	OPS
Video Teleconference System	1,800	OPS
Aviation Safety Reporting System Program	1,500	OPS
Financial Information System	770	OPS
Training Management Information System	1,500	OPS
Aggregate of smaller Personnel Systems	13,650	OPS
Aggregate of numerous Management Systems	26,530	OPS
Operational Terminal Communications	39,700	OPS

	Thousands	Appro.
Operational Enroute Communications	118,419	OPS
Operational Flight Advisory & Weather Communications	93,485	OPS
Operational Utility Communications	15,582	OPS
Other Aviation Operations Communications	43,628	OPS
Logistics and Inventory System and Computerized Dispatch Sys.	5,090	OPS
Office Automation Technology Services (OATS)	1,315	OPS
Aviation Safety Analysis System	20,000	F&E
Aviation Safety Advance Analysis Program	2,000	F&E
Computer Resource Nucleus Program (CORN)	35,000	F&E
Advanced Automation System (AAS)	544,500	F&E
Voice Switching Control System (VSCS)	190,500	F&E
Terminal Voice Switch Replacement	26,600	F&E
National Airspace Systems Recovery Communications (RCOM)	8,000	F&E
Flight Service Automation System (FSAS)	8,800	F&E
Central Weather Processor (CWP)	2,500	F&E
Automated Surface Observation System	32,900	F&E
Integrated Terminal Weather System (ITWS)	11,100	F&E
Aviation Weather Products Generator (AWPG)	14,000	F&E
Remote Maintenance Monitoring System (RMMS)	27,700	F&E
Traffic Management System (TMS)	23,600	F&E
Enroute S/W Development & Support	10,600	F&E
Terminal S/W Development & Support	7,400	F&E
Automated Radar Terminal System (ARTS) IIA	4,000	F&E
Automated Radar Terminal System (ARTS) IIA	26,100	F&E
ARTS IIE Upgrade at Select ATC Facilities	23,600	F&E
Terminal Air Traffic Control Automation (TATCA)	9,000	F&E
Airport Surface Traffic Automation (ASTA)	2,000	F&E
Airport Movement Area Safety System (AMASS)	13,100	F&E
Radio Control Equipment	20,400	F&E
Communication Facilities Expansion	10,000	F&E
Emergency Transceivers/Replacement	3,000	F&E
Aeronautical Data Link (ADL)	25,000	F&E
RML Replacement/Expansion Radio Communication Link	15,550	F&E
Data Multiplexing Network (DMN)	17,500	F&E
Weather Message Switching Center Replacement	3,600	F&E
Critical Telecommunications Support	2,000	F&E
NAS Data Interchange Network IIC (NADIN)	8,500	F&E
Safety Performance Analysis System	2,840	RE&D
Performance Enhancement System	650	RE&D
Total	1,655,302	

CLAIMS PENDING AGAINST THE GOVERNMENT

Mr. CARR. Please indicate the number of claims pending against the government regarding the FAA.

[The information follows:]

There are currently 342 claims pending against the government regarding the FAA.

Mr. CARR. Please update the table shown on pages 563 through 565 of last year's hearing record showing cases closed over the past year.

[The information follows:]

<u>ACCIDENT DATE</u>	<u>ACCIDENT LOCATION</u>	<u>AMOUNT DEMANDED</u>	<u>AMOUNT PAID</u>
09/01/79	Green River, UT.	\$ 200,000	\$ 0
01/13/80	Santa Barbara, CA.	\$ 750,000	\$ 0
01/15/80	Havana, Cuba	\$ 10,000	\$ 0
08/12/83	Pomona, NJ.	\$ 1,850,000	\$ 0
11/12/83	San Diego, CA.	\$ 13,010,000	\$ 0
04/25/85	Wakenney, KS.	\$ 75,400,000	\$ 0
09/02/85	Ogden, UT.	\$ 18,000,000	\$ 0
03/01/86	Drayton Pl., MI.	\$ 29,010,000	\$ 517,000
06/25/86	Nashua, NH.	\$ 6,000,000	\$ 0
07/22/86	Isla Verde, PR.	\$ 12,950,000	\$ 2,457,000
08/25/86	Mesquite, NV.	\$ 30,180,000	\$ 0
08/26/86	Cherokee Cty., GA.	\$ 25,000	\$ 0
10/16/86	Altadena, CA.	\$ 3,679,174	\$ 0
10/24/86	Hawthorne, CA.	\$ 35,000	\$ 26,600

<u>ACCIDENT DATE</u>	<u>ACCIDENT LOCATION</u>	<u>AMOUNT DEMANDED</u>	<u>AMOUNT PAID</u>
11/20/86	Dulles Airport, VA.	\$ 10,086,146	\$ 0
05/01/87	Orlando, FL.	\$ 10,699,841	\$ 1,734,140
05/17/87	Dulles Int. Airport VA.	\$ 300,000	\$ 3,500
08/31/87	Opa Locka, FL.	\$ 3,000,000	\$ 637,407
09/11/87	Riverhead, NY.	\$ 10,000,000	\$ 0
10/20/87	Indianapolis, IN.	\$ 45,344,738	\$ 0
11/03/87	Rancho Palos Verde CA.	\$ 30,000	\$ 21,420
11/05/87	San Francisco, CA.	\$ 700,000	\$ 0
12/06/87	La Grange, GA.	\$ 8,625,000	\$ 0
12/31/87	Oklahoma City, OK.	\$ 500,000	\$ 0
01/23/88	Temple City, CA.	\$ 1,000,000	\$ 50,000
02/18/88	Ft. Pierce, FL.	\$ 23,700,000	\$ 0
03/20/88	Quantico, VA.	\$ 6,202,000	\$ 1,850,000
04/13/88	Coarsegold, CA.	\$ 200,000	\$ 5,000
06/07/88	Beaver Falls, PA.	\$ 106,000	\$ 0
07/08/88	Waterloo, IA.	\$ 50,000	\$ 15,000
07/26/88	Upland, CA.	\$ 202,250	\$ 10,189
08/02/88	Wall Twnship., NJ.	\$ 3,500,000	\$ 15,000
08/11/88	East Hanover, PA.	\$ 1,205	\$ 0
09/02/88	Temecula, CA.	\$ 19,369,000	\$ 0
10/16/88	Alexandria, VA.	\$ 100,000	\$ 0
11/02/88	San Juan, PR.	\$ 250,000	\$ 0
11/19/88	Oklahoma City, OK.	\$ 25,000,000	\$ 50,000
01/24/89	Bloomington, IL.	\$ 4,547,499	\$ 294,000

<u>ACCIDENT DATE</u>	<u>ACCIDENT LOCATION</u>	<u>AMOUNT DEMANDED</u>	<u>AMOUNT PAID</u>
02/15/89	Ruidoso, NM.	\$ 10,000,000	\$ 0
02/19/89	Glen Falls, NY.	\$ 24,005,000	\$ 0
03/08/89	Kennedy Airport, NY.	\$ 1,050,000	\$ 0
03/09/89	Providence, RI.	\$ 60,000	\$ 0
03/12/89	Oklahoma City, OK.	\$ 100,000	\$ 0
03/29/89	Oklahoma City, OK.	\$ 125,000	\$ 7,100
04/15/89	Chicago, IL.	\$ 2,500,000	\$ 1,300,000
07/21/89	Los Angeles, CA.	\$ 1,446	\$ 1,205
07/22/89	Athol, ID.	\$ 5,000,000	\$ 0
08/02/89	Sarasota, FL.	\$ 60,075,000	\$ 0
08/14/89	Edison, NJ.	\$ 2,501,000	\$ 190,000
08/22/89	Livermore, CA.	\$ 5,000,000	\$ 0
09/18/89	Barstow, CA.	\$ 372,000	\$ 15,000
10/28/89	Molokai, HI.	\$ 3,850,000	\$ 0
12/15/89	San Diego, CA.	\$ 56,184	\$ 0
01/21/90	Willow, AK.	\$ 80,843	\$ 55,000
02/14/90	Midland, TX.	\$ 10,000,000	\$ 10,000
04/22/90	Eden Prairie, NM.	\$ 50,000	\$ 0
05/10/90	Mayaguez, P.R.	\$ 21,000,000	\$ 0
05/23/90	Costa Mesa, CA.	\$ 40,000	\$ 0
06/25/90	Vancouver, WA.	\$ 100,000	\$ 20,000
08/03/90	Palmer Twnship, PA.	\$ 6,000,000	\$ 0
09/28/90	Tampa, FL.	\$ 15,000	\$ 0
10/26/90	Palm Springs, CA.	\$ 2,427	\$ 2,427
11/16/90	Montgomery, AL.	\$ 63,081	\$ 21,906

<u>ACCIDENT DATE</u>	<u>ACCIDENT LOCATION</u>	<u>AMOUNT DEMANDED</u>	<u>AMOUNT PAID</u>
02/01/91	Los Angeles, CA.	\$ 108,216,012	\$33,947,951
03/08/91	Murfreesboro, TN.	\$ 70,000	\$ 0
03/10/91	Oklahoma City, OK.	\$ 100,000	\$ 0
04/01/91	Lancaster, CA.	\$ 103,000	\$ 10,908
04/05/91	Memphis, TN.	\$ 75,907	\$ 0
04/10/91	Lakeland, FL.	\$ 14,000	\$ 14,000
05/15/91	Grand Turk, Br. West Indies.	\$ 500	\$ 500
03/21/92	Brubank, CA.	\$ 50,000	\$ 0

Non-accident cases closed were:

<u>CLAIM LOCATION</u>	<u>AMOUNT DEMANDED</u>	<u>AMOUNT PAID</u>
Burlington, MA.	\$ 100,000	\$ 0
Cleveland, OH.	\$ 500,000	\$ 0
Dayton, OH.	\$ 3,150,000	\$ 0
Memphis, TN.	\$ 10,323	\$ 0
Memphis, TN.	\$ 36,949	\$ 0
Memphis, TN.	\$ 9,199,000	\$ 0
Reno, NV.	\$ 5,000,000	\$ 0
Oakland, CA.	\$ 150,112	\$ 0
Oklahoma City, OK.	\$ 667,000	\$ 0
Washington, DC	\$ 100,000	\$ 0
Washington, DC	\$ 7,000,000	\$ 0

AIP DISCRETIONARY GRANTS

Mr. CARR. Please provide for the record a listing of fiscal year 1992 discretionary grants in excess of \$3 million, indicating the airport, amount and purpose of the grant, similar in format to that shown on pages 588-601 of last year's hearing record.

[The information follows:]

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:16:30
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

PAGE: 1

FISCAL YEAR(S) 92
 FUNDING LIMIT GT 003000000

LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
ALABAMA -----			
BIRMINGHAM BIRMINGHAM	REMOVE OBSTRUCTIONS; EXTEND RUNWAY (SITE PREPARATION); EXTEND TAXIWAYS; RELOCATE PUBLIC ROAD; ACQUIRE LAND FOR DEVELOPMENT; PROVIDE RELOCATION ASSISTANCE	\$4,000,000	\$5,843,051
	SUB TOTALS	\$4,000,000	\$5,843,051
ALASKA -----			
SAND POINT SAND POINT	CONSTRUCT AND LIGHT RUNWAY; CONSTRUCT TAXIWAY AND APRON; ACQUIRE SNOW REMOVAL EQUIPMENT	\$4,635,066	\$4,793,000
	SUB TOTALS	\$4,635,066	\$4,793,000
ARIZONA -----			
CHANDLER CHANDLER MUNICIPAL	ACQUIRE POWER SWEEPER; CONSTRUCT AND LIGHT TAXIWAYS; INSTALL INSTRUMENT APPROACH AID AND WEATHER REPORTING EQUIPMENT; ACQUIRE LAND FOR DEVELOPMENT	\$3,871,564	\$3,871,564
PHOENIX PHOENIX SKY HARBOR INTERNATIONAL	OVERLAY RUNWAY; CONSTRUCT AND RECONSTRUCT TAXIWAYS; INSTALL RUNWAY, TAXIWAY AND ACCESS ROAD SIGNS; CONSTRUCT AIRFIELD LIGHTING VAULTS	\$3,766,544	\$12,758,272

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:17:01
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

PAGE: 2

FISCAL YEAR(S) 92
 FUNDING LIMIT GT 003000000

LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS "
PHOENIX PHOENIX SKY HARBOR INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY	\$5,000,000	\$5,000,000
PRESCOTT ERNEST A LOVE FIELD	CONSTRUCT AND LIGHT RUNWAY AND TAXIWAYS; INSTALL TAXIWAY SIGNS; IMPROVE DRAINAGE	\$4,000,000	\$4,000,000
	SUB TOTALS	\$16,638,108	\$25,629,836

CALIFORNIA

BYRON NEW	EXTEND RUNWAY; CONSTRUCT RUNWAY, TAXIWAYS AND APRON; CONSTRUCT WETLANDS (ENVIRONMENTAL MITIGATION); IMPROVE DRAINAGE	\$3,875,000	\$3,875,000
CHINO CHINO	CONSTRUCT RUNWAY (PHASE I); ACQUIRE LAND FOR DEVELOPMENT	\$3,683,709	\$3,683,709
SAN JOSE SAN JOSE INTERNATIONAL	EXTEND RUNWAY AND TAXIWAY	\$3,500,000	\$3,500,000
SANTA ANA JOHN WAYNE/ORANGE COUNTY	OVERLAY RUNWAY; CONSTRUCT AND OVERLAY TAXIWAYS; INSTALL TAXIWAY SIGNS; REHABILITATE RUNWAY AND TAXIWAY LIGHTING	\$8,000,000	\$8,582,437
	SUB TOTALS	\$19,058,709	\$19,641,146

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:17:39
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

PAGE: 3

FISCAL YEAR(S) 92
 FUNDING LIMIT GT 003000000

LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
COLORADO -----			
COLORADO SPRINGS COLORADO SPRINGS MUNICIPAL	INSTALL RUNWAY/TAXIWAY SIGNS, LIGHTING AND SECURITY GATES; CONSTRUCT TAXIWAY AND SERVICE ROADS	\$3,060,391	\$4,815,708
DENVER DENVER INTERNATIONAL (NEW)	CONSTRUCT RUNWAYS, TAXIWAYS, APRON AND AUTOMATED GROUND TRANSPORTATION SYSTEM; ACQUIRE LAND FOR DEVELOPMENT (PHASE II)	\$32,125,000	\$34,354,194
DENVER DENVER INTERNATIONAL (NEW)	INSTALL RUNWAY/TAXIWAY SIGNS AND TAXIWAY LIGHTING	\$10,061,600	\$10,061,600
	SUB TOTALS	\$45,246,991	\$49,231,502
CONNECTICUT -----			
WINDSOR LOCKS BRADLEY INTERNATIONAL	CONSTRUCT, REHABILITATE AND LIGHT TAXIWAYS; EXPAND AND REHABILITATE APRONS; INSTALL TAXIWAY SIGNS	\$3,334,391	\$7,241,300
	SUB TOTALS	\$3,334,391	\$7,241,300
FLORIDA -----			
JUPITER NORTH PALM BEACH COUNTY (NEW)	CONSTRUCT AND LIGHT RUNWAYS AND TAXIWAYS; INSTALL AIRPORT BEACON AND VISUAL APPROACH AIDS; CONSTRUCT AIRFIELD LIGHTING VAULT; IMPROVE DRAINAGE	\$4,322,000	\$4,322,000

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:17:59
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

PAGE: 4

FISCAL YEAR(S) 92
 FUNDING LIMIT GT 003000000

LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
LAKELAND LAKELAND LINDER REGIONAL	EXTEND AND LIGHT RUNWAY AND TAXIWAY; INSTALL RUNWAY SIGNS; RELOCATE SERVICE ROAD	\$3,279,000	\$3,279,000
ORLANDO ORLANDO INTERNATIONAL	RECONSTRUCT AND LIGHT RUNWAY AND TAXIWAYS; CONSTRUCT AND LIGHT TAXIWAYS AND APRON (PHASE VI)	\$10,159,524	\$10,494,000
ORLANDO ORLANDO INTERNATIONAL	CONSTRUCT RUNWAY AND TAXIWAYS (ENVIRONMENTAL MITIGATION) (PHASE III); CONSTRUCT ACCESS ROAD (PHASE I)	\$8,873,890	\$8,873,890
	SUB TOTALS	\$26,634,414	\$26,968,890
GEORGIA -----			
ATLANTA WILLIAM B HARTSFIELD-ATLANTA INTL	ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND); SOUNDPROOF RESIDENCES	\$5,000,000	\$21,784,304
	SUB TOTALS	\$5,000,000	\$21,784,304
GUAM -----			
AGANA GUAM INTERNATIONAL AIR TERMINAL	CONSTRUCT AND LIGHT TAXIWAY, APRON AND SERVICE ROAD	\$4,000,000	\$5,074,989

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:18:22
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

PAGE: 5

FISCAL YEAR(S) 92
 FUNDING LIMIT GT 003000000

LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS "
	SUB TOTALS	\$4,000,000	\$5,074,989
HAWAII -----			
KAILUA-KONA KE-AHOLE	STRENGTHEN RUNWAY AND TAXIWAYS; CONSTRUCT TAXIWAYS AND APRONS; UPGRADE AIRFIELD LIGHTING SYSTEM	\$5,042,501	\$5,616,457
	SUB TOTALS	\$5,042,501	\$5,616,457
ILLINOIS -----			
STATE OF ILLINOIS BLOCK GRANT	VARIOUS AIRPORT DEVELOPMENT PROJECTS AT NONPRIMARY AIRPORTS UNDER THE STATE BLOCK GRANT PILOT PROGRAM	\$22,347,642	\$29,235,943
BELLEVILLE SCOTT AFB	REMOVE OBSTRUCTIONS; ACQUIRE LAND FOR DEVELOPMENT; PROVIDE RELOCATION ASSISTANCE	\$5,000,000	\$5,000,000
BLOOMINGTON/NORMAL BLOOMINGTON/NORMAL	IMPROVE DRAINAGE; IMPROVE AND RELOCATE PUBLIC ROADS	\$3,544,480	\$4,008,055
CHICAGO CHICAGO MIDWAY	IMPROVE RUNWAY SAFETY AREA; REHABILITATE RUNWAY AND APRONS; CONSTRUCT AND RECONSTRUCT TAXIWAYS; INSTALL RUNWAY SIGNS, RUNWAY SURFACE CONDITION SENSORS AND VISUAL APPROACH AIDS; CONSTRUCT SERVICE ROAD	\$8,557,419	\$12,300,000

PROGRAM: ARPB01
 RUN DATE: 04/28/93

RUN TIME: 14:18:36
 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
CHICAGO CHICAGO O'HARE INTERNATIONAL	SOUNDPROOF SCHOOL (NORTHLAKE)	\$3,220,000	\$3,220,000
CHICAGO/WEST CHICAGO DUPAGE	CONSTRUCT AND LIGHT RUNWAYS, TAXIWAYS AND APRON; RELOCATE UTILITIES, PUBLIC ROAD AND RAILROAD TRACK; ACQUIRE LAND FOR DEVELOPMENT AND APPROACHES	\$7,000,000	\$7,000,000
MOLINE QUAD-CITY	OVERLAY RUNWAY; REHABILITATE RUNWAY AND TAXIWAY LIGHTING AND AIRFIELD LIGHTING VAULT; INSTALL TAXIWAY SIGNS, EMERGENCY POWER GENERATOR AND AIRPORT BEACON; ACQUIRE LAND FOR DEVELOPMENT	\$3,194,000	\$3,194,000
ROCKFORD GREATER ROCKFORD	CONSTRUCT TAXIWAY; INSTALL TAXIWAY SIGNS; INSTALL INSTRUMENT APPROACH AID; RELOCATE ROAD AND UTILITY	\$3,388,601	\$3,756,200
	SUB TOTALS	\$56,252,142	\$67,714,198
KANSAS -----			
WICHITA WICHITA MID-CONTINENT	INSTALL RUNWAY/TAXIWAY SIGNS (PHASE I) AND SECURITY SYSTEM	\$3,316,035	\$4,481,561
	SUB TOTALS	\$3,316,035	\$4,481,561

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 AIRPORT IMPROVEMENT PROGRAM
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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
KENTUCKY			
COVINGTON CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL	SOUNDPROOF RESIDENCES; ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$5,000,000	\$5,000,000
COVINGTON CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL	CONSTRUCT RUNWAY AND TAXIWAYS (PHASE VI)	\$3,875,147	\$5,843,424
COVINGTON CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL	CONSTRUCT APRON (SITE PREPARATION)	\$5,800,000	\$5,800,000
LOUISVILLE STANDIFORD FIELD	CONSTRUCT RUNWAYS; ACQUIRE LAND FOR DEVELOPMENT; PROVIDE RELOCATION ASSISTANCE (PHASE I)	\$10,000,000	\$14,964,958
	SUB TOTALS	\$24,675,147	\$31,608,382
LOUISIANA			
BATON ROUGE BATON ROUGE METROPOLITAN, RYAN FIELD	ACQUIRE LAND FOR NOISE COMPATIBILITY	\$7,300,000	\$7,300,000
NEW ORLEANS NEW ORLEANS INTERNATIONAL/MOISA T FIELD	ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$6,520,000	\$6,520,000

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 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
NEW ORLEANS	INSTALL SECURITY FENCING;	\$10,000,000	\$13,100,000
NEW ORLEANS	REHABILITATE RUNWAYS AND		
INTERNATIONAL/MOISA	TAXIWAYS; CONSTRUCT TAXIWAY,		
T FIELD	APRONS, ACCESS ROADS AND		
	SERVICE ROAD; INSTALL		
	AIRFIELD LIGHTING CONTROL		
	SYSTEM; ACQUIRE LAND FOR		
	DEVELOPMENT (PHASE I)		
	SUB TOTALS	\$23,820,000	\$26,920,000
MICHIGAN			
DETROIT	CONSTRUCT RUNWAY AND TAXIWAY	\$8,000,000	\$16,440,138
DETROIT			
METROPOLITAN-WAYNE			
COUNTY			
	SUB TOTALS	\$8,000,000	\$16,440,138
MINNESOTA			
DULUTH	CONSTRUCT REGIONAL AIRCRAFT	\$7,185,240	\$7,185,240
DULUTH	RESCUE AND FIRE FIGHTING		
INTERNATIONAL	TRAINING FACILITY		
	SUB TOTALS	\$7,185,240	\$7,185,240
MISSISSIPPI			
JACKSON	INSTALL RUNWAY/TAXIWAY SIGNS;	\$4,958,836	\$4,958,836
JACKSON	OVERLAY AND GROOVE RUNWAY;		
INTERNATIONAL	REHABILITATE RUNWAY AND		
	TAXIWAY LIGHTING; CONSTRUCT		
	AIRFIELD LIGHTING VAULT;		
	INSTALL EMERGENCY POWER		
	GENERATOR		

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 AIRPORT IMPROVEMENT PROGRAM
 DISCRETIONARY FUNDS

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
	SUB TOTALS	\$4,958,836	\$4,958,836
MISSOURI -----			
STATE OF MISSOURI BLOCK GRANT	VARIOUS AIRPORT DEVELOPMENT PROJECTS AT NONPRIMARY AIRPORTS UNDER THE STATE BLOCK GRANT PILOT PROGRAM	\$9,582,400	\$14,003,205
ST LOUIS LAMBERT-ST LOUIS INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY	\$9,296,600	\$9,296,600
	SUB TOTALS	\$18,879,000	\$23,299,805
NEBRASKA -----			
LINCOLN LINCOLN MUNICIPAL	INSTALL RUNWAY/TAXIWAY SIGNS; REHABILITATE RUNWAY; REHABILITATE, IMPROVE AND EXPAND APRONS; ACQUIRE FRICTION MEASURING EQUIPMENT	\$3,513,804	\$3,513,804
	SUB TOTALS	\$3,513,804	\$3,513,804
NEVADA -----			
LAS VEGAS MC CARRAN INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$3,581,697	\$3,581,697

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
RENO RENO CANNON INTERNATIONAL	ACQUIRE LAND FOR DEVELOPMENT; PROVIDE RELOCATION ASSISTANCE	\$4,000,000	\$4,000,000
	SUB TOTALS	\$7,581,697	\$7,581,697
NEW HAMPSHIRE -----			
MANCHESTER MANCHESTER	CONSTRUCT AND RECONSTRUCT TAXIWAYS; CONSTRUCT APRON	\$6,231,925	\$7,424,502
	SUB TOTALS	\$6,231,925	\$7,424,502
NEW MEXICO -----			
ALBUQUERQUE ALBUQUERQUE INTERNATIONAL	INSTALL RUNWAY/TAXIWAY SIGNS; REHABILITATE RUNWAY; CONSTRUCT, RECONSTRUCT, EXTEND AND LIGHT TAXIWAYS; IMPROVE DRAINAGE	\$3,222,905	\$3,222,905
ALBUQUERQUE ALBUQUERQUE INTERNATIONAL	RECONSTRUCT TAXIWAY	\$4,500,000	\$4,500,000
	SUB TOTALS	\$7,722,905	\$7,722,905
NEW YORK -----			
BUFFALO GREATER BUFFALO INTERNATIONAL	REMOVE OBSTRUCTIONS; CONSTRUCT TERMINAL; EXPAND TERMINAL; IMPROVE ROADS	\$6,270,000	\$6,270,000

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 AIRPORT IMPROVEMENT PROGRAM
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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
NEW YORK JOHN F KENNEDY INTERNATIONAL	OVERLAY, GROOVE AND LIGHT RUNWAY	\$8,460,000	\$8,460,000
SYRACUSE SYRACUSE-HANCOCK INTERNATIONAL	SOUNDPROOF RESIDENCES; ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$5,308,700	\$5,308,700
	SUB TOTALS	\$20,038,700	\$20,038,700
NORTH CAROLINA -----			
STATE OF NORTH CAROLINA BLOCK GRANT	VARIOUS AIRPORT DEVELOPMENT PROJECTS AT NONPRIMARY AIRPORTS UNDER THE STATE BLOCK GRANT PILOT PROGRAM	\$12,700,000	\$17,278,062
CHARLOTTE CHARLOTTE/DOUGLAS INTERNATIONAL	EXTEND RUNWAY (SITE PREPARATION); IMPROVE ACCESS ROAD; RELOCATE PUBLIC ROAD; ACQUIRE LAND FOR DEVELOPMENT AND NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE	\$3,492,384	\$10,286,051
	SUB TOTALS	\$16,192,384	\$27,564,113
NORTH DAKOTA -----			
GRAND FORKS GRAND FORKS INTERNATIONAL	RECONSTRUCT AND LIGHT RUNWAY AND TAXIWAY; APPLY POROUS FRICTION COURSE; INSTALL TAXIWAY SIGNS, RUNWAY SURFACE CONDITION SENSORS AND VEHICLE GATES	\$3,487,082	\$3,677,714

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
	SUB TOTALS	\$3,487,082	\$3,677,714
OHIO			
CLEVELAND CLEVELAND-HOPKINS INTERNATIONAL	CONSTRUCT AIRCRAFT RESCUE AND FIRE FIGHTING BUILDING AND ELECTRICAL VAULT	\$5,130,750	\$5,130,750
TOLEDO TOLEDO EXPRESS	REMOVE OBSTRUCTIONS; ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$5,363,744	\$5,363,744
	SUB TOTALS	\$10,494,494	\$10,494,494
OKLAHOMA			
TULSA TULSA INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY	\$7,200,000	\$7,200,000
	SUB TOTALS	\$7,200,000	\$7,200,000
PENNSYLVANIA			
JOHNSTOWN JOHNSTOWN-CAMBRIA COUNTY	EXTEND RUNWAY (SITE PREPARATION)	\$7,650,000	\$7,950,000
PHILADELPHIA PHILADELPHIA INTERNATIONAL	REHABILITATE AND EXPAND TAXIWAYS; INSTALL TAXIWAY SIGNS; UPGRADE EMERGENCY POWER GENERATOR	\$11,260,621	\$11,313,472

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 DISCRETIONARY FUNDS

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
PITTSBURGH GREATER PITTSBURGH INTERNATIONAL	REHABILITATE RUNWAY AND TAXIWAY; CONSTRUCT ROADWAY TUNNEL; IMPROVE SERVICE ROAD	\$5,461,561	\$5,712,250
PITTSBURGH GREATER PITTSBURGH INTERNATIONAL	CONSTRUCT TAXIWAYS, APRONS AND SERVICE ROAD (MIDFIELD TERMINAL) (PHASE II)	\$7,000,000	\$7,000,000
PITTSBURGH GREATER PITTSBURGH INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY; SOUNDPROOF RESIDENCES	\$3,100,000	\$3,100,000
	SUB TOTALS	\$34,472,182	\$35,075,722
SOUTH CAROLINA -----			
COLUMBIA -	CONSTRUCT REGIONAL AIRCRAFT RESCUE AND FIRE FIGHTING TRAINING FACILITY (PHASE I)	\$3,441,360	\$3,441,360
ROCK HILL BRYANT FIELD	REMOVE OBSTRUCTIONS; EXTEND. REHABILITATE AND STRENGTHEN RUNWAY; EXTEND, RELOCATE AND STRENGTHEN TAXIWAY; REHABILITATE AND STRENGTHEN APRON; INSTALL PARTIAL INSTRUMENT APPROACH AID	\$3,434,443	\$3,434,443
	SUB TOTALS	\$6,875,803	\$6,875,803
TENNESSEE -----			
MEMPHIS MEMPHIS INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$5,000,000	\$12,502,426

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 DISCRETIONARY FUNDS

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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
NASHVILLE NASHVILLE INTERNATIONAL	ACQUIRE LAND FOR NOISE COMPATIBILITY; PROVIDE RELOCATION ASSISTANCE (NOISE LAND); SOUNDPROOF RESIDENCES	\$5,000,000	\$5,000,000
NASHVILLE NASHVILLE INTERNATIONAL	EXTEND RUNWAY (PHASE I)	\$5,000,000	\$5,000,000
NASHVILLE NASHVILLE INTERNATIONAL	CONSTRUCT RUNWAY (PHASE II-A); EXTEND RUNWAY AND TAXIWAY (PHASE I); RELOCATE PUBLIC ROAD (PHASE I)	\$3,800,000	\$3,800,000
NASHVILLE NASHVILLE INTERNATIONAL	CONSTRUCT RUNWAY (PHASE II-C); EXTEND RUNWAY AND TAXIWAY (PHASE II); RELOCATE PUBLIC ROAD (PHASE II)	\$7,500,000	\$7,500,000
	SUB TOTALS	\$26,300,000	\$33,802,426
TEXAS -----			
DALLAS PUBLIC USE HELIPORT (NEW)	CONSTRUCT HELIPORT (PHASE II)	\$8,200,000	\$8,200,000
DALLAS/FORT WORTH DALLAS/FORT WORTH INTERNATIONAL	CONSTRUCT TAXIWAYS AND APRONS (PHASE I)	\$12,500,000	\$12,500,000
HOUSTON ELLINGTON FIELD	REHABILITATE AND WIDEN RUNWAY; INSTALL RUNWAY AND RUNWAY CENTERLINE LIGHTING	\$3,316,105	\$4,859,505

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 AIRPORT IMPROVEMENT PROGRAM
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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
HOUSTON HOUSTON INTERCONTINENTAL	RECONSTRUCT TAXIWAY; IMPROVE DRAINAGE	\$4,650,664	\$4,650,664
HOUSTON WILLIAM P HOBBY	EXTEND, WIDEN AND REHABILITATE TAXIWAYS; IMPROVE DRAINAGE	\$3,233,191	\$6,654,111
	SUB TOTALS	\$31,899,960	\$36,864,280
VIRGIN ISLANDS -----			
CHARLOTTE AMALIE CYRIL E KING	CONSTRUCT AND LIGHT RUNWAY (PHASE II); OVERLAY TAXIWAY; CONSTRUCT ACCESS ROAD	\$6,000,000	\$7,737,187
	SUB TOTALS	\$6,000,000	\$7,737,187
VIRGINIA -----			
WASHINGTON, DC WASHINGTON DULLES INTERNATIONAL	REHABILITATE RUNWAYS, TAXIWAYS AND APRONS; CONSTRUCT AND EXTEND TAXIWAYS; CONSTRUCT APRONS; INSTALL APPROACH AND APRON LIGHTING; WIDEN ACCESS ROAD; ACQUIRE LAND FOR DEVELOPMENT AND APPROACHES; PROVIDE RELOCATION ASSISTANCE (PHASE I)	\$8,200,000	\$8,200,000
WASHINGTON, DC WASHINGTON NATIONAL	CONSTRUCT AND EXTEND TAXIWAYS; RECONSTRUCT, CONSTRUCT AND EXPAND APRONS; CONSTRUCT AND REALIGN ACCESS ROADS (PHASE I)	\$3,500,000	\$3,500,000

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 AIRPORT IMPROVEMENT PROGRAM
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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
	SUB TOTALS	\$11,700,000	\$11,700,000
WASHINGTON			
BELLINGHAM BELLINGHAM INTERNATIONAL	REMOVE OBSTRUCTIONS; INSTALL RUNWAY/TAXIWAY SIGNS AND SECURITY SYSTEM; EXTEND AND LIGHT RUNWAY; CONSTRUCT, EXTEND AND LIGHT TAXIWAYS; RELOCATE VISUAL APPROACH AIDS	\$3,950,000	\$4,632,773
SEATTLE SEATTLE-TACOMA INTERNATIONAL	SOUNDPROOF RESIDENCES; PROVIDE RELOCATION ASSISTANCE (NOISE LAND)	\$8,500,000	\$10,500,000
SEATTLE SEATTLE-TACOMA INTERNATIONAL	INSTALL RUNWAY/TAXIWAY SIGNS; RECONSTRUCT RUNWAY AND TAXIWAYS; CONSTRUCT TAXIWAYS; INSTALL RUNWAY AND TAXIWAY LIGHTING AND RUNWAY SURFACE CONDITION SENSORS; IMPROVE AIRFIELD LIGHTING VAULT	\$12,010,000	\$17,226,783
	SUB TOTALS	\$24,460,000	\$32,359,556
WISCONSIN			
MILWAUKEE GENERAL MITCHELL INTERNATIONAL	EXPAND AND REHABILITATE APRONS; INSTALL TAXIWAY SIGNS AND RUNWAY LIGHTS	\$3,408,750	\$3,652,047

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AIRPORT IMPROVEMENT PROGRAM
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LOCATION/ AIRPORT	WORK DESCRIPTION	DISCRETIONARY PORTION	TOTAL FEDERAL FUNDS
	SUB TOTALS	\$3,408,750	\$3,652,047
	GRAND TOTALS	\$508,256,266	\$617,717,585

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AIRPORT GRANTS OBLIGATIONS AND EXPENDITURES

Mr. CARR. Please update for the record the table on pages 603 through 604 of last year's hearing record showing projects for which obligations were incurred more than two years ago and no cash expenditures have been made.

[The information follows:]

Airport grants more than 2 years old with no payments

Location	Airport	Project No.	Federal Funds
Arkansas	St System Plan	S5-90	40,500
Pago Pago, AS.	International	05-85	87,602
Pago Pago, AS.	International	07-87	174,095
Pago Pago, AS.	International	09-89	559,114
Pago Pago, AS.	International	10-90	815,000
Flagstaff, Az.	Pulliam	09-90	366,358
Blythe, Ca.	Blythe	04-90	784,800
Burbank, Ca.	Burbank-Glendale	10-89	5,600,000
Camarillo, Ca.	Camarillo	09-90	207,000
Hawthorne, Ca.	Municipal	05-90	500,000
Lone Pine, Ca.	Lone Pine	02-84	23,850
Los Angeles, Ca.	International	07-86	160,000
Los Angeles, Ca.	International	13-90	10,434,225
Mammoth Lakes, Ca.	Mammoth	08-88	223,625
Ontario, Ca.	International	04-86	3,014,223
Ontario, Ca.	International	05-87	1,086,533
Ontario, Ca.	International	06-88	11,982,525
Redlands, Ca.	Redlands Municipal	03-88	40,000
Rancho, Ca.	French Valley	09-90	750,000
Sacramento, Ca.	Metropolitan	11-88	7,652,814
San Carlos, Ca.	San Carlos	03-90	250,000
San Diego, Ca.	International	10-88	10,948,491
San Jose, Ca.	Reid-Hillview	02-84	900,000
Van Nuys, Ca.	Van-Nuys	02-89	2,148,300
Van Nuys, Ca.	Van-Nuys	03-90	1,149,840
Bridgeport, Ct.	Memorial	03-87	132,229
New Haven, Ct.	Tweed-New Haven	05-89	1,056,042
Wilmington, De.	Greater Wilmington	07-90	207,000
Ft Lauderdale, Fl.	New Heliport	01-90	92,336

Milton, Fl.	Peter Prince	06-90	42,700
Agana, Guam	International	09-90	651,165
Agana, Guam	International	10-90	2,800,000
Honolulu, Hi.	International	11-88	257,066
Kahului, Hi.	Maul, New	01-89	353,263
Kaunakakai, Hi.	Molokai	02-89	200,000
Mokuleia, Hi.	Dillingham	01-88	312,718
New Orleans, La.	International	16-88	1,830,390
New Orleans, La.	International	21-90	6,500,000
Bedford, Ma.	Hanscom Field	05-87	557,357
Bedford, Ma.	Hanscom Field	08-90	144,000
Boston, Ma.	International	16-85	1,065,115
Boston, Ma.	International	32-89	903,191
Boston, Ma.	International	33-89	713,420
Boston, Ma.	International	34-89	1,208,106
Clinton, Md.	Hyde Field	05-89	76,500
Ocean City, Md.	Municipal	07-90	200,000
Biddeford, Me.	Municipal	03-86	209,500
Detroit, Mi.	Willow Run	06-88	696,779
Three Rivers, Mi.	Municipal	02-89	82,569
Reno, Nv.	Reno/Stead	07-90	125,000
Atlantic City, NJ	International	08-90	194,500
Atlantic City, NJ	International	09-90	2,149,808
Caldwell, NJ	Essex County	07-88	1,800,000
Albany, NY	County	09-86	793,926
Dunkirk, NY	Municipal	07-90	123,300
Farmingdale, NY	Republic	06-88	175,000
Farmingdale, NY	Republic	07-88	1,000,000
Hudson, NY	Columbia County	08-90	102,600
Newburgh, NY	Stewart	05-89	3,237,018
New York, NY	JFK	27-88	1,530,000
New York, NY	JFK	37-90	7,222,714
New York, NY	LaGuardia	21-87	1,000,000
New York, NY	LaGuardia	29-90	960,000
New York, NY	LaGuardia	32-90	2,200,000
New York, NY	Pan Am Metroport	01-90	270,000
Niagara, NY	International	07-89	57,069
Saratoga Sprgs, NY	Saratoga County	01-82	291,852
Warwick, NY	Municipal	02-88	23,310
New York	Reg System Plan	R4-90	44,900
Toledo, Oh.	Metcalf Field	05-89	199,800
Redmond, Or.	Roberts Field	06-90	1,283,220

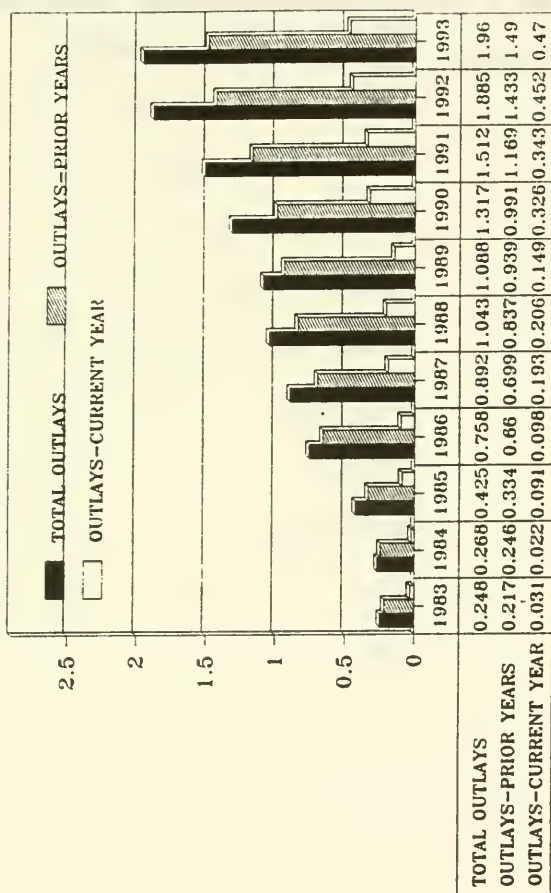
Middletown, Pa.	Harrisburg	07-87	62,270
Middletown, Pa.	Harrisburg	15-90	2,485,000
Philadelphia, Pa.	Northeast Phila	05-90	1,800,000
Philadelphia, Pa.	International	22-89	750,000
Philadelphia, Pa.	International	24-90	1,100,000
Philadelphia, Pa.	International	25-90	975,000
Westchester, Pa.	Brandywine	04-88	519,850
Moen, TT	International	03-85	148,500
Houston, Tx.	Ellington Field	04-90	1,000,000
Lufkin, Tx.	Angelina County	05-90	319,500
Texas	Metro. Sys Plan	M7-90	67,000
Martinsville, Va.	Blue Ridge	04-90	40,230
Roanoke, Va.	Municipal/Woodrum	10-90	927,000
Rutland, Vt.	Rutland State	07-81	220,000
Washington	St System Plan	S6-90	100,000
Washington	St System Plan	S7-90	100,000

F&E OUTLAYS

Mr. CARR. Please update the bar chart shown on page 613 of last year's hearing record concerning end of year F&E outlays.
[The information follows:]

OUTLAYS, END OF YEAR FACILITIES AND EQUIPMENT

BILLIONS OF DOLLARS



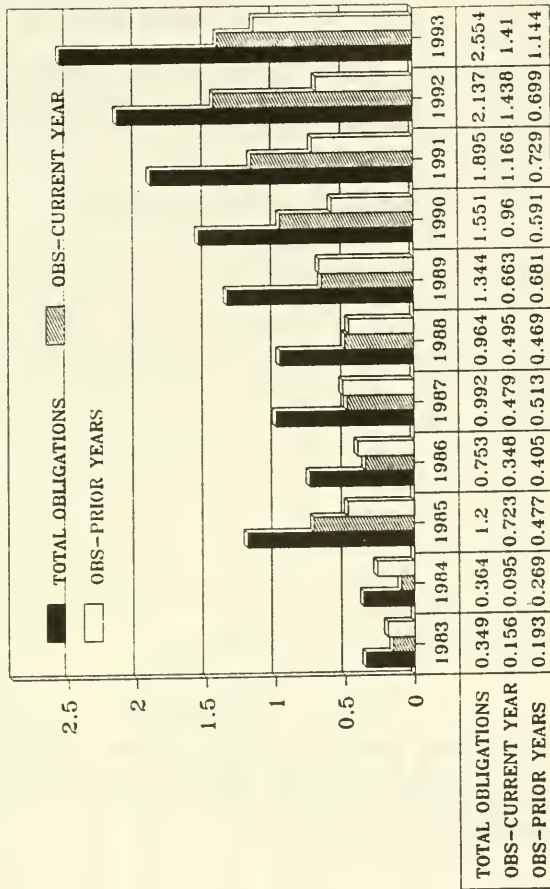
F&E OBLIGATIONS

Mr. CARR. Please update the related bar chart shown on page 615 of last year's hearing record concerning end of year F&E obligations.

[The information follows:]

OBLIGATIONS, END OF YEAR FACILITIES AND EQUIPMENT

BILLIONS OF DOLLARS



F&E FIRST YEAR OBLIGATIONS

Mr. CARR. Last year, you estimated first-year obligations of 57 percent for your fiscal year 1992 and 1993 funds. What did you actually achieve for fiscal year 1992 funds, and what is your current estimate for fiscal year 1993?

Please update the table of appropriation and first year obligation percentage for the F&E appropriation, as shown on page 616 of last year's hearing record, by providing data for fiscal years 1985-1994. [The information follows:]

TRENDS IN FIRST YEAR OBLIGATION RATES

[Dollars in thousands]

	Appropriation ¹	Obligation (percent)
Fiscal Year:		
1994 (estimate)	² \$2,524,000	60.0
1993 (estimate)	2,350,000	60.0
1992	³ 2,394,000	60.0
1991	1,095,380	55.6
1990	1,721,171	55.8
1989	1,383,184	47.9
1988	1,102,831	44.9
1987	796,498	60.2
1986	884,111	39.3
1985	1,317,063	54.5

¹ Appropriation as adjusted by transfers, sequestrations, and restorals.

² Includes \$106,718 for investment proposal.

³ Excludes \$15,000 for storm supplemental enacted during last month of the fiscal year.

NEW F&E PROJECTS

Mr. CARR. Please provide a list of all new F&E projects in the fiscal year 1994 budget, similar in format to that shown on pages 622-623 of last year's hearing record.

[The information follows:]

Facilities and Equipment
Projects that had no
FY 1993 funding
(in thousands)

Budget Item	Page Number	Program Title	FY 1994 Congress Request	Justification for Activity
1B02	F&E-48	Runway Status Light System	2,000.0	Improve safety of aircraft operations on the ground by warning of potential runway incursions. Lighting systems will provide the pilot more control over surface safety.
1B03	F&E-50	Terminal ATC Automation (TATCA)	8,650.0	Enhance en route and traffic efficiency through airspace and runway utilization by providing fuel efficient and conflict free controller advisors.
1E04	F&E-58	NAS Modernization of System Support Laboratory	3,500.0	Provides the latest state-of-the-art laboratory environment to support the implementation, testing and integration of new NAS systems prior to delivery at FAA field sites.
1E08	F&E-58	Technical Center Research and Development Laboratory - Establish	3,500.0	Provides the support and integration of the Human Factors Research Laboratory with other laboratories to focus on the measurement of human performance and support research.
1E07	F&E-59	CAMI Infrastructure - Modernization	1,400.0	Provide replacement of the non-functional hypobaric chamber.
1E08	F&E-60	Precision Automated Tracking System (PATs)	2,100.0	Provide a mobile laser tracking facility to provide aircraft positioning data in support of GPS, MODE-S, ILS, TCAS, and other flight test programs.
2A21	F&E-88	Air/Ground Communications Radio Frequency Interference Elimination	5,000.0	Improve operations by reducing radio interference and improve operational performance.
2A23	F&E-88	Display Channel Complex Rehost (DCCR)	10,800.0	Provide display channel replacement to solve reliability problems and increase display channel capacity to meet projected air traffic requirements.
2A24	F&E-89	Long Range Radar (LRR) - Establish	10,000.0	Provide LRR coverage in the Loring, Maine area.
2A25	F&E-80	DOD Base Closure	7,600.0	Allows FAA to convert various military bases to civilian facilities with standard FAA equipment.
2A28	F&E-91	Performance Monitoring Analysis	900.0	Provide an automated means to support capacity and performance of air traffic systems, both en route and terminal.
2B16	F&E-110	Emergency Transceiver Replacement	3,000.0	Provides FAA the upgrade necessary to maintain emergency communications for ATCTs and TRACONS.

FY 1994
Facilities and Equipment
Projects that had no
FY 1993 funding
(\$in thousands)

2C05	F&E-125	Digital Altimeter Setting Indicator (DASI) Replacement	1,500.0	Provide DASI replacement systems, at 50 towers, that have exceeded their expected service life and have become too costly to maintain.
2E10	F&E-152	Large Airport Cable Loop Sustained Support	1,000.0	Enable the FAA Academy and Logistics Center to initiate training and support programs for cable loop systems.
2E11	F&E-153	Computer Aided Engineering and Graphics (CAEG) System	1,500.0	Provide plotters and upgraded software to ensure timely response in the areas of drafting, cartographic and standardization of engineering data and design.
2E12	F&E-154	Special Use Airspace Management System (SAMS)	3,000.0	Provides necessary software, hardware and communication units for real-time management of the Special Use Airspace.
3A13	F&E-172	Integrated Flight Quality Assurance	2,500.0	Provide the FAA with empirical data directly applicable to validating the effectiveness of FAA policies
3A16	F&E-176	National Aviation Safety Data Center	2,000.0	This program will significantly enhance safety and analysis monitoring capabilities.
3B04	F&E-182	National Airspace System Training	6,100.0	Provide for the acquisition and installation of simulation and communication devices, as well as, classroom and work areas improvements at the FAA Academy.
4A06	F&E-190	Transition Engineering Support	48,274.0	Provide technical support to regions and headquarters organizations for planning, implementation and integration of NAS projects.
4A09	F&E-193	Acquisition Oversight	1,700.0	Provide contractor support for evaluation of alternatives solutions and review of documents and schedule estimates to support FAA programs.
4A11	F&E-198	FAA System Architecture	3,000.0	Provide agencywide information technology needs on a shared data base to ensure mission goals, objectives and priorities.

MAJOR SYSTEM ACQUISITIONS

Mr. CARR. Please update the listing of FAA Level I, II, and III major system acquisitions as shown on pages 631-633 of last year's hearing record.

[The information follows:]

LEVEL I MAJOR ACQUISITIONS

Program	FY94 Funding Request in Millions	Mission Need Statement Approval Date
Advanced Automation System (AAS)	\$455.8	Approved for limited production under original NAS Plan.
Aeronautical Data Link (ADL)	24.1	10/23/91 (KDP-1)
Airport Surface Traffic Automation (ASTA)	2.0	7/23/91 (KDP-1)
Airport Surveillance Radar (ASR-9)	44.3	Approved for production under original NAS Plan.
Air Route Surveillance Radar (ARSR-4) [Long Range Radar (LLR)]**	20.4	Approved for production under original NAS Plan.
Aviation Weather Products Generator (AWPG) [Aviation Weather Development Program]	14.3	4/3/91 (KDP-1)
Central Weather Processor (MWP, RWP)	1.4	Will be prepared for to support limited production approval.
Enhanced Terminal Voice Switch Replacement	1.0	10/22/92 (KDP-1)
FAA Systems Architecture	3.0	8/10/92 (KDP-1)
FSAS Operational Supportability and Implementation Systems (OASIS)	14.6	8/10/92 (KDP-1)
Integrated Terminal Weather System (ITWS) [Aviation Weather Development Program]	9.0	4/3/91 (KDP-1)
Low-Level Wind Shear Alert System	2.2	3/10/92 (KDP-3)
Microwave Landing System (MLS)	46.2	7/2/92 (KDP-3)
Mode S	10.1	Approved for production under original NAS Plan.
Radio Control Equipment	14.9	3/10/92
Satellite Navigation to Civil Aviation	17.9 (R&D)	10/23/92 (KDP-1)
Simulation-Based Training Systems	24.3	3/9/92 (KDP-1)
Terminal Area Surveillance System (TASS)	3.0 (R&D)	4/13/92 (KDP-1)
Terminal Doppler Weather Radar (TDWR)	5.8	Approved for production under original NAS Plan.
Terminal Enhanced Weather Surveillance [ASR - ASR-9 Modification for Low Altitude Windshear Detection]**	1.0	7/23/91 (KDP-1)
Terminal Radar Digitizing, Replacement, and Establishment [ASR-9 - Terminal Surveillance Radar Engineering]**	2.0	7/30/91 (KDP-1)
Voice Switching and Control System (VSCS)	232.5	10/30/92 (KDP-3)

* FY94 budget request as of 19 March 1993.

** Brackets identify budget line that major acquisitions reside within when different from program name.

LEVEL II MAJOR ACQUISITIONS

Program	FY94 Funding Request in Millions*	Mission Need Statement Approval Date
Aircraft Fleet Modernization [Flight Inspection Aircraft]**	\$37.9	9/10/91 (KDP-4)
Automated Surface Observing System (ASOS)	29.9	Approved under original NAS Plan.
Computer Resources Nucleus (CORN) [Automated Data Processing Facilities Management]**	35.0	Approved under original NAS Plan.
DOD Base Closures - Facilities Transfer	7.6	4/22/93 (KDP-4)
Flight Service Automation System (FSAS)	8.8	Approved for production under original NAS Plan.
NAS Implementation Support Contract (NISC)	48.3	10/25/92
Oceanic Systems Development and Support	27.0	5/1/92 (KDP-3)
Radar Microwave Link System Replacement/Expansion	15.5	Approved for production under original NAS Plan.
Systems Engineering and Technical Assistance Contract (SETA) [Formerly Systems Engineering and Integration Contract (SEIC)]	121.2	3/6/92
Technical Assistance Contracts (TAC) for Navigation, Radar, Communications, and Weather	***	1/9/92 and 2/11/92.
Technical Support Services Contract (TSSC)	64.9	Approved under original NAS Plan.
Terminal ATC Automation (TATCA)	8.7	8/16/91 (KDP-1)

* FY94 budget request as of 19 March 1993.

** Brackets identify budget line that major acquisitions reside within when different from program name.

*** Each TAC is funded by multiple budget program lines.

LEVEL III MAJOR ACQUISITIONS

Program	FY94 Funding Request in Millions*	Mission Need Statement Approval Date
Aircraft Related Equipment	\$12.0	Approved 1/17/92 (KDP-4)
Airport Surface Detection Equipment (ASDE-3) [ASDE Mosaic and Logistics Support]**	12.6	Approved under original NAS Plan.
Alaskan NAS Interfacility Communications System (ANICS)	13.0	6/14/91 (KDP-4)
ARTCC Operational Support Space	25.5	1/24/92
Automated Radar Terminal System (ARTS) IIIE Upgrades to Selected Air Facilities	23.6	4/22/92 (KDP-4)
Data Multiplexing Network (DMN) Phase III	17.5	Approved for production under original NAS Plan.
Direction Finder Modernization	10.0	Approved for production under original NAS Plan.
Enroute Software Development and Integration Support	10.6	6/12/92 (KDP-4)
Instrument Landing System (ILS)	36.2	Approved for production under original NAS Plan.
Maintenance Automation Program (MAP) [Remote Maintenance Monitoring System (RMMS)]**	27.7	Approved for production under original NAS Plan.
National Airspace Data Information Network (NADIN II)	8.5	Approved for production under original NAS Plan.
NAS Recovery Communications (RCOM)	6.8	4/3/91 (KDP-1)
Next Generation Weather Radar (NEXRAD)	53.6	Approved for production under original NAS Plan.
Precision Runway Monitor	27.0	12/26/92 (KDP-3)
Terminal Software Development	7.4	4/23/91 (KDP-4)
Terminal System Programs (Formerly NAS chapter 8 Transition Programs)	202.0	Approved for production under original NAS Plan.
Terminal Voice Switch Replacement (TVSR)	26.6	11/15/91 (KDP-4)
Traffic Alert and Collision Avoidance System (TCAS)	6.2 (R&D)	Approved for production under original NAS Plan.
VOR/DME/TACAN Network Plan	15.1	Approved for production under original NAS Plan.

* FY94 budget request as of 19 March 1993.

** Brackets identify budget line that major acquisitions reside within when different from program name.

AAS PRIME CONTRACT FUNDING

Mr. CARR. Please provide a detailed breakdown of your prime contract funding estimate for the advanced automation system program for fiscal years 1993 and 1994, similar in format to that shown on pages 638-639 of last year's record.

[The information follows:]

ADVANCED AUTOMATION SYSTEM—PRIME CONTRACT FUNDING ESTIMATES

[Dollars in millions]

	Fiscal year	
	1993 program	1994 request
Contract requirements.....	226.60	279.40
Award fee.....	6.69	6.00
Options.....	1.50	2.80
New requirements:		
TCCC CHI.....	0.00	14.00
ISSS block update.....	15.00	5.55
Interfaces.....	4.50	0.00
ISSS recovery plan.....	34.33	0.00
TAAS changes.....	0.00	20.00
Total.....	288.62	327.75

AAS TERMINATION LIABILITY ESTIMATE

Mr. CARR. What is the most current estimate of the termination liability to be incurred by the FAA if the AAS contract were to be canceled?

[The information follows:]

The estimated termination liability for fiscal year 1993 is \$94.2M. The estimated termination liability for fiscal year 1994 is \$102.3 million.

AAS COSTS BY MAJOR SUBSYSTEM

Mr. CARR. Please provide a breakdown of your fiscal year 1993 funding and 1994 request for AAS by major subsystem (PAMRI, ISSS, TAAS, TCCC, and ACCC).

[The information follows:]

ADVANCED AUTOMATION SYSTEM—FY 1993 & 1994 BUDGET

[Dollars in million]

	Fiscal year	
	1993 program	1994 request
PAMRI.....	0.00	0.00
ISSS.....	141.00	106.75
TAAS.....	41.00	65.30
TCCC.....	5.00	39.20
ACCC.....	11.00	20.00
Not segment specific.....	90.62	96.50
Total contract requirement.....	286.62	327.75
AERA.....	0.00	22.50
Technical Support: Not segment specific.....	36.99	42.95
Implementation: Not segment specific.....	18.39	24.32
Training: ISSS.....	0.00	7.13

ADVANCED AUTOMATION SYSTEM—FY 1993 & 1994 BUDGET—Continued

[Dollars in million]

	Fiscal year	
	1993 program	1994 request
ARTCC Modernization: ISSS.....	55.60	31.10
Total.....	399.80	455.75

COMMISSIONING DATE FOR RALEIGH-DURHAM PRM

Mr. CARR. Last year, you were planning to commission the precision runway monitor at Raleigh Durham Airport in June 1993. Is that still your schedule?

[The information follows:]

Yes, contractor testing has been completed, Operational Test and Evaluation is underway, and training of technicians and controllers is being conducted to support a June 30 commissioning date.

PRM PROGRAM UPDATE

Mr. CARR. Please provide an overall update on the PRM program today, and state the sites currently planned to receive those radars with their associated commissioning dates. Please also explain any changes to the site location and schedule information provided on page 730 of last year's hearing record.

[The information follows:]

The PRM Production Program has been progressing on schedule. Key milestones accomplished include:

Awarded letter contract on March 27, 1992 for \$33.8 million.

Definitized letter contract on December 22 for \$33.25 million.

Conducted System Requirements Review.

Conducted Configuration Design Review.

Negotiated Option for logistic support documentation and site spares. (Award: April 30, 1993)

The proposed PRM sites and anticipated commissioning dates are as follows:

Location	Delivery	Commissioning
Minn/St. Paul.....	May 94	May 95.
Memphis.....	February 94	August 95.
RDO ¹	May 95	November 95.
Atlanta.....	August 95.....	February 96.
BWI.....	November 95	March 96.

The sites are the same as reported in last year's hearing. The order of installation has been revised slightly (RDU as third) since PRM operations at Atlanta and BWI are contingent upon completion of construction of parallel runways.

¹ The RDU system will replace the system being upgraded and deployed in 1993 at RDU.

VSCS PROGRAM COST ESTIMATES

Mr. CARR. Please update the data on VSCS costs as shown on pages 650-651 of last year's hearing record.

[The information follows:]

VOICE SWITCHING AND CONTROL SYSTEM CURRENT PROGRAM ESTIMATE

[In millions of dollars]

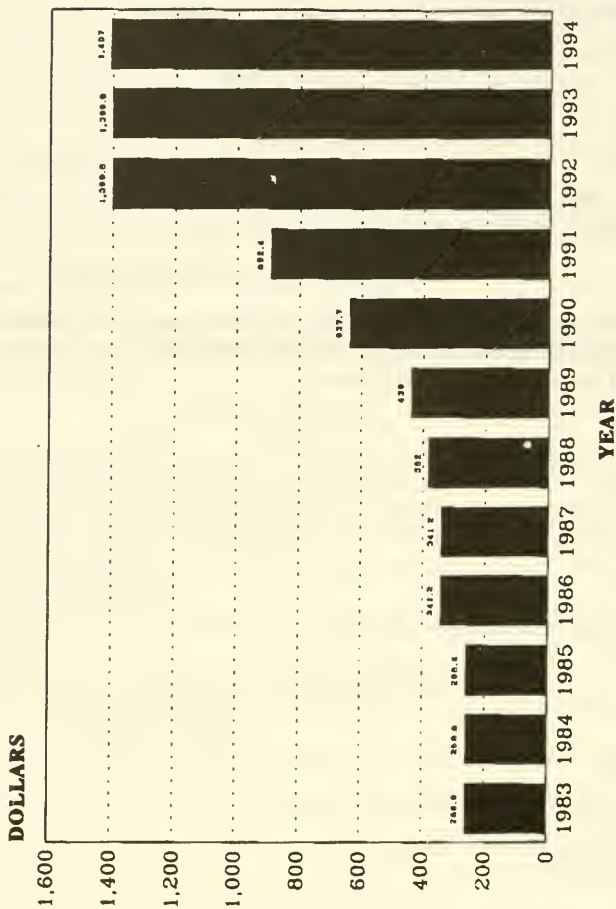
Fiscal Year	RE&D	F&E	Total
1992 and prior	\$125.8	\$468.2	\$594.0
1993.....		266.0	246.0
1994.....		232.5	232.5
1995.....		248.2	284.2
1996.....		120.6	120.6
1997.....		71.2	71.2
1998.....		18.4	18.4
Beyond.....		1.9	1.9
Total	\$125.8	\$1,407.0	\$1,532.8

VSCS PROGRAM COST ESTIMATES

Mr. CARR. Please update the bar graph on VSCS program cost estimates shown on page 652 of last year's hearing record.

[The information follows:]

Total VSCS F&E Program Estimate (\$M)



VSCS SCHEDULE

Mr. CARR. According to last year's schedule, operational testing on the 430 position switch for VSCS was to be completed by January 1993, and the system was to be delivered to the Aeronautical Center in July 1993. Are those estimates still accurate? If not, why not?

[The information follows:]

The 430 position switch was originally scheduled for delivery to the FAA Technical Center for operational testing to be completed in January 1993. The current schedule is for completion of operational testing at the Technical Center on August 2, 1993, six months later than the original schedule. The VSCS Replan provided a six month schedule slip in major milestones, including site deliveries, primarily to allow sufficient time for software development and integration which had been underestimated by the Contractor.

The original schedule did not provide for delivery of the 430 position switch to the Aeronautical Center. The plan provided for Airway Facilities (AF) training on the 430 position switch at the FAA Technical Center, with a separate 120 position system to be delivered to the Aeronautical Center in July 1993. The present plan is to initiate early AF training on the 120 position system at Harris Corporation, in order to provide increased availability at the Technical Center for operational testing of the 430 position switch. The 120 position system will be delivered to the Aeronautical Center in May 1994. This will support the Replan Schedule for site deliveries.

VSCS PRIME CONTRACT COSTS

Mr. CARR. Please provide a breakdown of the fiscal year 1994 budget request for the VSCS prime contract, similar in format to that shown on page 654 of last year's hearing record.

[The information follows:]

Voice Switching and Control System: Fiscal Year 1994—Prime Contract Requirements-Development ¹

[Dollars in millions]

<i>Description</i>	<i>Amount</i>
Data	1.1
Performance Award.....	3.0
Program management.....	9.0
Prototype Upgrade.....	28.7
Planned Product Improvement	0.7
VSCS Production Systems.....	3.8
Console Equipment & Trainers	1.0
Leased Transition Switches.....	0.5
Training	7.0
Interfaces for Existing Radios	1.5
Training Facilities	0.2
ISSS Interface Changes.....	2.0
Total requirements—development.....	58.5
Total requirements—production	148.1
Total requirements—prime contract.....	206.6

ASR-9 SITE IMPLEMENTATION DATA

Mr. CARR. Please update the ASR-9 site implementation data shown on pages 660-663 of last year's hearing record.

[The information follows:]

ASR-9 SITE IMPLEMENTATION SCHEDULE

<u>Location</u>		<u>Delivery</u>	<u>Commissioning</u>
1)	HUNTSVILLE, AL	DEC-87	MAY-89
2)	FAA TECH CENTER, NJ	JAN-89	N/A
3)	TRAINING ACADEMY, OK	JAN-89	N/A
4)	FAA DEPOT, OK	FEB-89	N/A
5)	NEWBURGH-STEWART, NY	MAY-89	APR 90
6)	BROWNSVILLE, TX	MAY-89	OCT-89
7)	ORLANDO, FL	JUN-89	FEB-90
8)	SALT LAKE CITY, UT	JUL-89	FEB-90
9)	CHANTILLY, VA	JUL-89	MAY-93
10)	PASCO, WA	JUL-89	JAN-90
11)	MOSES LAKE, WA	AUG-89	FEB-90
12)	LOS ANGELES NORTH, CA	AUG-89	MAR-90
13)	LOS ANGELES SOUTH, CA	AUG-89	MAR-90
14)	McCLELLAN AFB, CA	SEP-89	JUN-90
15)	BEALE AFB, CA	OCT-89	JUN-90
16)	WICHITA, KS	OCT-89	JUN-90
17)	BALTIMORE, MD	OCT-89	AUG-90
18)	TULSA, OK	OCT-89	OCT-90
19)	PROVIDENCE, RI	NOV-89	DEC-90
20)	RALEIGH, NC	NOV-89	DEC-90
21)	CHARLESTON, SC	NOV-89	JUN-93
22)	WSMR, NM	NOV-89	N/A
23)	WSMR, NM	NOV-89	N/A
24)	WSMR, NM	NOV-89	N/A

	<u>Location</u>	<u>Delivery</u>	<u>Commissioning</u>
25)	ROCHESTER, NY	DEC-89	OCT-93
26)	TOLEDO, OH	JAN-90	FEB-91
27)	SYRACUSE, NY	JAN-90	FEB-93
28)	FT. RUCKER, AL	JAN-90	DEC-92
29)	CHARLOTTE, NC	JAN-90	MAY-91
30)	BIRMINGHAM, AL	FEB-90	JUN-93
31)	OFFUTT AFB, NE	MAR-90	SEP-90
32)	DALLAS-ADDISON, TX	MAR-90	OCT-93
33)	MADISON, WI	MAR-90	DEC-90
34)	NELLIS AFB, NV	MAR-90	AUG-90
35)	CHICAGO-TINLEY, IL	APR-90	APR-93
36)	CHICAGO-OHARE, IL	APR-90	JUN-92
37)	ATLANTA, GA	MAY-90	OCT-93
38)	PITTSBURGH, PA	MAY-90	DEC-93
39)	OAKLAND, CA	MAY-90	MAR-92
40)	SAN JOSE-MOFFETT NAS, CA	JUN-90	APR-91
41)	NORFOLK, VA	JUN-90	FEB-93
42)	BOSTON, MA	JUN-90	JUN-91
43)	RICHMOND, VA	JUL-90	SEP-93
44)	FT. LAUDERDALE, FL	JUL-90	MAR-93
45)	PHILADELPHIA, PA	JUL-90	AUG-93
46)	KANSAS CITY, MO	AUG-90	APR-91
47)	FAA FACILITY	AUG-90	N/A
48)	MIAMI, FL	AUG-90	JUN-93
49)	INDIANAPOLIS, IN	AUG-90	MAR-93
50)	DENVER, CO	SEP-90	MAY-91
51)	MINNEAPOLIS, MN	SEP-90	NOV-93
52)	SAN ANTONIO, TX	OCT-90	SEP-91
53)	NANTUCKET, MA	OCT-90	JUN-91
54)	AUSTIN, TX	OCT-90	JUN-91
55)	HARRISBURG, PA	NOV-90	FEB-93
56)	HOUSTON-HOBBY, TX	NOV-90	NOV-92
57)	ATLANTIC CITY, NJ	NOV-90	SEP-93
58)	CLEVELAND, OH	NOV-90	MAY-91
59)	HOUSTON-IAH, TX	DEC-90	NOV-91
60)	ST. LOUIS, MO	DEC-90	JUL-91
61)	ANDREWS AFB, MD	DEC-90	MAY-93
62)	COLUMBUS, OH	JAN-91	DEC-93

	<u>Location</u>	<u>Delivery</u>	<u>Commissioning</u>
63)	MEMPHIS, TN	JAN-91	SEP-92
64)	PORTLAND, OR	FEB-91	FEB-93
65)	NEW ORLEANS, LA	FEB-91	JUN-93
66)	ONTARIO-MARCH AFB, CA	FEB-91	DEC-92
67)	BUFFALO, NY	MAR-91	JUL-92
68)	MILWAUKEE, WI	MAR-91	DEC-93
69)	PHOENIX, AZ	APR-91	SEP-92
70)	TROUT CREEK-HILL AFB, UT	APR-91	N/A
71)	DETROIT, MI	APR-91	AUG-92
72)	LONG BEACH, CA	MAY-91	AUG-93
73)	BOVINE HILL AFB, UT	MAY-91	N/A
74)	DALLAS-COLLEYVILLE, TX	JUN-91	OCT-93
75)	CEDAR MTN-HILL AFB, UT	JUN-91	N/A
76)	TUSCON-DAVIS MONTHAN AFB, AZ	JUL-91	SEP-93
77)	BURBANK, CA	AUG-91	JUN-93
78)	OKLAHOMA CITY, OK	AUG-91	OCT-93
79)	ALBUQUERQUE, NM	AUG-91	APR-93
80)	DAYTON, OH	SEP-91	MAR-94
81)	GREENSBORO, NC	OCT-91	NOV-93
82)	KNOXVILLE, TN	OCT-91	NOV-93
83)	LAS VEGAS, NV	DEC-91	OCT-93
84)	SAN DIEGO, CA	JAN-92	JAN-94
85)	WINDSOR LOCKS, CT	FEB-92	JUL-92
86)	SEATTLE, WA	MAR-92	JUL-93
87)	LUBBOCK, TX	MAR-92	AUG-92
88)	DENVER-IRONDALE, CO	APR-92	OCT-93
89)	CEDAR RAPIDS, IA	MAY-92	JAN-94
90)	HONOLULU, HI	MAY-92	JUL-93
91)	JACKSONVILLE, FL	JUN-92	APR-94
92)	MISSOULA, MT	SEP-92	JAN-94
93)	MEDFORD, OR	AUG-92	OCT-93
94)	DALLAS/FORT WORTH-EAST, TX	AUG-92	JUL-94
95)	COVINGTON, KY-CINCINNATI	OCT-92	JUN-94
96)	NASHVILLE, TN	NOV-92	MAY-94
97)	SAN ANGELO, TX	DEC-92	JUL-93
98)	DENVER-PLATTEVILLE, CO	DEC-92	OCT-93
99)	EL PASO-BIGGS, TX	JAN-93	OCT-94
100)	SARASOTA-BRADENTON, FL	FEB-93	DEC-94
101)	MONTGOMERY-MAXWELL AFB, AL	MAR-93	DEC-93
102)	GRAND RAPIDS, MI	APR-93	JAN-95

	<u>Location</u>	<u>Delivery</u>	<u>Commissioning</u>
103)	NEW YORK-JFK, NY	MAY-93	MAR-94
104)	CAMP PENDLETON, CA	JUN-93	FEB-94
105)	DES MOINES, IA	JUN-93	FEB-94
106)	FORT WAYNE, IN	JUL-93	AUG-94
107)	LOUISVILLE, KY	AUG-93	JUN-94
108)	FT. CAMPBELL, KY	AUG-93	SEP-94
109)	SHREVEPORT-BARKSDALE, LA	SEP-93	JUN-94
110)	DAYTONA BEACH, FL	OCT-93	AUG-94
111)	GAINESVILLE, FL	OCT-93	SEP-94
112)	DETROIT (2), MI	NOV-93	FEB-95
113)	TAMPA, FL	NOV-93	DEC-94
114)	ALBANY, NY	NOV-93	OCT-94
115)	ROSWELL, N.M.	JAN-94	JAN-95
116)	YAKIMA, WA	JAN-94	NOV-94
117)	NEWARK, NJ	MAR-94	JAN-95
118)	CHARLOTTESVILLE, VA	MAR-94	SEP-94
119)	BOSTON (2), MA	MAR-94	JAN-95
120)	SCOTT AFB, IL	APR-94	JAN-95
121)	PORTLAND, ME	APR-94	JAN-95
122)	ATLANTA (2), GA	MAY-94	FEB-95
123)	FAYETTEVILLE, AR	MAY-94	FEB-95
124)	FAYETTEVILLE, NC	MAY-94	JAN-95
125)	WHITE PLAINS, NY	JUN-94	FEB-95
126)	GRAND JUNCTION, CO	JUL-94	APR-95
127)	DALLAS-FORT WORTH (4), TX	OCT-94	JUL-95
128)	MARTINSBURG, WV	NOV-94	JUN-95
129)	LYNCHBURG, VA	DEC-94	JAN-95
130)	ISLIP, NY	FEB-95	NOV-94
131)	WASHINGTON-NATIONAL, VA	FEB-95	DEC-95
132)	TIPPETT MIDDLE-HILL AFB, UT	FEB-95	N/A
133)	FT. HOOD, TX	FEB-95	N/A
134)	COLUMBIA, MO	MAY-95	JAN-96

ARSR-4 LONG RANGE RADAR SITE IMPLEMENTATION

Mr. CARR. Please also update the ARSR-4 long range radar site implementation data shown on page 669 of last year's hearing record.

[The information follows:]

The table below updates the long range radar site implementation data shown on page 669 of last year's hearing record. The table reflects (1) the changes in delivery sequence to accommodate revised site priorities, and (2) the changes in operational dates to incorporate schedule delays.

Location	Operational date	Fiscal year funded
FAA Aeronautical Center.....	February 1994.....	1988
Mount Laguna, CA.....	January 1994.....	1989
Makah, WA.....	June 1994.....	1989
Richmond, FL.....	July 1994.....	1989
Paso Robles, CA.....	August 1994.....	1989
Rainbow Ridge, CA.....	October 1994.....	1989
Oilton, TX.....	November 1994.....	1989
Jedburg, SC.....	December 1994.....	1989
Mt. Santa Rose, Guam.....	December 1994.....	1990
Lake Charles, LA.....	January 1995.....	1990
Salem, OR.....	February 1995.....	1990
Gibbsboro, NJ.....	February 1995.....	1990
Mt. Kaala, HI.....	March 1995.....	1990
Cross City, FL.....	March 1995.....	1990
Rocksprings, TX.....	April 1995.....	1990
Oceana, VA.....	April 1995.....	1990
Slidell, LA.....	April 1995.....	1990
Fort Fisher, NC.....	May 1995.....	1991
North Truro, MA.....	May 1995.....	1991
Morales, TX.....	June 1995.....	1991
Ft. Lonesome, FL.....	June 1995.....	1991
Tyndall, FL.....	July 1995.....	1991
Nashwauk, MN.....	July 1995.....	1991
Lakeside, MT.....	August 1995.....	1991
Bucks Harbor, ME.....	August 1995.....	1991
Murphy Dome, AK.....	August 1995.....	1991
Watford City, ND.....	September 1995.....	1992
Whitehouse, FL.....	September 1995.....	1992
Riverhead, NY.....	October 1995.....	1992
King Mountain, TX.....	October 1995.....	1992
Empire, MI.....	November 1995.....	1992
Finley, ND.....	November 1995.....	1992
Eagle Peak, TX.....	December 1995.....	1992
Mica Peka, WA.....	December 1995.....	1992
Mill Valley, CA.....	January 1996.....	1993
Malmstrom, MT.....	January 1996.....	1993
Patrick, FL.....	February 1996.....	1993
Deming, NM.....	February 1996.....	1993
Ajo, AZ.....	March 1996.....	1993
Utica, NY.....	March 1996.....	1993

NEXRAD SITE AND DELIVERY DATE

Mr. CARR. Please update the NEXRAD site and delivery data shown on pages 674-676 of last year's hearing record.

[The information follows:]

<u>Number</u>	<u>Site Location</u>	<u>Date</u>
1	Operational Support Facility Norman OK	12/88
2	NWS Maintenance Training Center Kansas City MO	5/90
3	Oklahoma City OK	5/90
4	Melbourne FL	3/91
5	Washington DC	7/91
6	St Louis MO	11/91
7	Dodge City KS	12/91
8	Houston TX	1/92
9	Wichita KS	7/92
10	Goodland KS	8/92
11	Kansas City MO	9/92
12	Amarillo TX	11/92
13	Little Rock AR	12/93
14	Phoenix AZ	1/93
15	Jackson MS	1/93
16	Miami FL	2/93
17	Tulsa OK	2/93
18	Denver CO	3/93
19	Topeka KS	3/93
20	Detroit MI	4/93
21	Chicago IL	4/93
22	Grand Island NE	4/93
23	Pittsburgh PA	6/93
24	Cleveland OH	6/93
25	Indianapolis IN	6/93
26	Harrisburg PA	7/93
27	Binghamton NY	7/93
28	Fairbanks AK	7/93
29	Anchorage AK	8/93
30	Philadelphia PA	8/93
31	Louisville KY	8/93
32	New York NY	8/93
33	Milwaukee WI	8/93
34	Memphis TN	9/93
35	Albany NY	9/93
36	Boston MA	9/93
37	Molokai HI	10/93
38	Portland ME	10/93

<u>Number</u>	<u>Site Location</u>	<u>Date</u>
39	Des Moines	IA 10/93
40	Boise	ID 10/93
41	Sioux Falls	SD 11/93
42	Columbia	SC 11/93
43	Beaufort	NC 11/93
44	Dallas-Ft. Worth	TX 12/93
45	Lubbock	TX 12/93
46	Los Angeles	CA 1/94
47	Fresno	CA 1/94
48	San Francisco	CA 2/94
49	Raleigh	NC 2/94
50	Seattle	WA 2/94
51	New Orleans	LA 3/94
52	Lake Charles	LA 3/94
53	Cincinnati	OH 4/94
54	Birmingham	AL 4/94
55	Atlanta	GA 4/94
56	Albuquerque	NM 5/94
57	San Antonio	TX 5/94
58	Omaha	NE 5/94
59	Buffalo	NY 6/94
60	Great Falls	MT 6/94
61	San Juan	PR 6/94
62	Charleston	WV 7/94
63	Minneapolis	MN 7/94
64	Knoxville	TN 7/94
65	Kamuela	HI 7/94
66	Reno	NV 8/94
67	Cheyenne	WY 8/94
68	Salt Lake City	UT 8/94
69	Missoula	MT 8/94
70	South Kauai	HI 8/94
71	Bismarck	ND 9/94
72	Norfolk	VA 9/94
73	Green Bay	WI 9/94
74	Wilmington	NC 9/94
75	Nashville	TN 10/94
76	Pueblo	CO 10/94
77	Roanoke	VA 10/94
78	Aberdeen	SD 10/94
79	Springfield	MO 11/94
80	Portland	OR 11/94
81	Eureka	CA 11/94
82	Moline	IL 11/94
83	Springfield	IL 12/94
84	Mobile	AL 12/94
85	Jacksonville	FL 12/94
86	Tallahassee	FL 12/94
87	Charleston	SC 1/95
88	Paducah	KY 1/95
89	Midland	TX 1/95
90	Tampa	FL 2/95

Number	Site Location		Date
91	Brownsville	TX	2/95
92	Sacramento	CA	2/95
93	Shreveport	LA	2/95
94	Georgetown	BA	3/95
95	Grand Turk	BA	4/95
96	Las Vegas	NV	4/95
97	Marquette	MI	4/95
98	Grand Rapids	MI	5/95
99	Alpena	MI	5/95
100	Duluth	MN	6/95
101	San Diego	CA	6/95
102	North Platte	NE	6/95
103	Cedar City	UT	7/95
104	Middleton Island	AK	7/95
105	Elko	NV	7/95
106	Pocatello	ID	7/95
107	Burlington	VT	8/95
108	Sitka	AK	8/95
109	Medford	OR	8/95
110	Flagstaff	AZ	8/95
111	Grand Junction	CO	9/95
112	Rapid City	SD	9/95
113	Riverton	WY	9/95
114	Pendleton	OR	10/95
115	La Crosse	WI	10/95
116	Yuma	AZ	10/95
117	Spokane	WA	11/95
118	Fargo	ND	11/95
119	Billings	MT	11/95
120	Tucson	AZ	11/95
121	Key West	FL	12/95
122	Glasgow	MT	12/95
124	El Paso	TX	12/95
123	Corpus Christi	TX	12/95
125	San Angelo	TX	1/96
126	South Hawaii	HI	2/96
127	King Salmon	AK	4/96
128	Nome	AK	5/96
129	Bethel	AK	5/96

MODE S GROUND LOCATION SCHEDULE

Mr. CARR. Please update the Mode S ground location schedule as shown on pages 724-727 of last year's hearing record.
[The information follows:]

The following is the most current Mode S delivery schedule:

Sequence Number	Site Name	State	Delivery Date
1	FAATC	NJ	07/15/91
2	FAATC	NJ	03/30/92
3	ORLANDO	FL	04/15/92
4	AERONAUTICAL CENTER	OK	07/30/92
5	LOGISTICS CENTER	OK	09/10/92
6	DENVER	CO	10/29/92
7	BALTIMORE	MD	11/19/92
8	AUSTIN/BRGSTRM	TX	01/04/93
9	DENVER 2 (PLATTEVILLE)	CO	01/11/93
10	KANSAS CITY	MO	01/18/93
11	CHARLOTTE	NC	01/25/93
12	CLEVELAND	OH	02/01/93
13	LONG BEACH	CA	02/08/93
14	SAN ANTONIO	TX	02/15/93
15	SEATTLE	WA	02/22/93
16	SAINT LOUIS	MO	03/01/93
17	HARRISBURG	PA	03/15/93
18	SAN DIEGO/MIR	CA	03/23/93
19	WINDSOR LOCKS	CT	03/29/93
20	PORTLAND	OR	04/05/93
21	WICHITA	KS	04/12/93
22	MEMPHIS	TN	04/19/93
23	BUFFALO	NY	04/26/93
24	MARYSVILLE/BEALE	CA	05/03/93
25	DALLAS-FT WORTH	TX	05/10/93
26	SALT LAKE CITY-9	UT	05/17/93

Sequence Number	Site Name	State	Delivery Date
27	DETROIT	MI	05/24/93
28	NASHVILLE	TN	05/31/93
29	SYRACUSE	NY	06/07/93
30	OAKLAND	CA	06/14/93
31	NEW ORLEANS	LA	06/21/93
32	OMAHA	NE	06/28/93
33	CHICAGO	IL	07/05/93
34	COVINGTON/CINCINNATI	OH	07/12/93
35	ANDREWS AFB	MD	07/19/93
36	MOFFETT/SAN JOSE	CA	07/26/93
37	OKLAHOMA CITY	OK	08/02/93
38	PROVIDENCE (CONVENTRY)	RI	08/09/93
39	CHICAGO SOUTH (TNLYPK)	IL	08/16/93
40	MIAMI	FL	08/23/93
41	PHILADELPHIA	PA	08/30/93
42	SACRAMENTO/MCLIND	CA	09/06/93
43	ALBUQUERQUE	NM	09/13/94
44	BANGOR	ME	09/20/93
45	MINNEAPOLIS	MN	09/27/93
46	CHARLESTON	SC	10/04/93
47	NORFOLK	VA	10/11/93
48	BURBANK	CA	10/18/93
49	CEDAR RAPIDS	IA	10/24/93
50	FAATC	NJ	11/01/93
51	INDIANAPOLIS	IN	11/08/93
52	BIRMINGHAM	AL	11/15/93
53	PITTSBURGH	PA	11/22/93
54	LAS VEGAS	NV	11/29/93
55	TULSA	OK	12/06/93
56	BOSTON	MA	12/13/93
57	DAYTON	OH	12/27/93
58	JACKSONVILLE	FL	01/03/94
59	WASHINGTON DULLES	VA	01/10/94
60	PHOENIX	AZ	01/17/94
61	DES MOINES	IA	01/24/94
62	LITTLE ROCK	AR	01/3/194
63	GRAND RAPIDS	MI	02/07/94
64	LOUISVILLE	KY	02/14/94

Sequence Number	Site Name	State	Delivery Date
65	JFK NEW YORK	NY	02/21/94
66	TUCSON/DAVIS MON	AZ	02/28/94
67	SPRINGFIELD	MO	03/07/94
68	PARKER	CO	03/14/94
69	COLUMBUS	OH	03/21/94
70	FORT LAUDERDALE	FL	03/28/94
71	ROANOKE	VA	04/04/94
72	LOS ANGELES-1	CA	04/11/94
73	HOUSTON/HOBBY	TX	04/18/94
74	TRINIDAD	CO	04/25/94
75	MILWAUKEE	WI	05/02/94
76	SARASOTA/BRADENTON	FL	05/09/94
77	ROCHESTER	NY	06/16/94
78	LOS ANGELES-2	CA	05/23/94
79	EL PASO/BIGGS	TX	05/30/94
80	SALT LAKE CITY/FRAN PK-1	UT	06/06/94
81	TYLER	MN	06/13/94
82	RALEIGH/DURHAM	NC	06/20/94
83	NEWARK	NJ	06/20/94
84	ONTARIO	CA	07/04/94
85	HOUSTON	TX	07/11/94
86	ROCK SPRINGS	WY	07/18/94
87	EVANSVILLE	IN	07/25/94
88	TAMPA	FL	08/01/94
89	ALBANY	NY	08/08/94
90	EL TORO (CAMP PENDLETON)	CA	08/15/94
91	ABILENE	TX	08/22/94
92	GRAND JUNCTION	CO	08/29/94
93	DULUTH	MN	09/05/94
94	TALLAHASSEE	FL	09/12/94
95	ISLIP	NY	09/19/94
96	FALLON	NV	09/26/94
97	LAKE CHARLES	LA	08/22/94
98	GREAT FALLS	MT	10/10/94
99	GREEN BAY	WI	10/17/94
100	PENSACOLA	FL	09/12/94
101	WHITE PLAINS	NY	10/31/94
102	SANTA BARBARA	CA	11/07/94

Sequence Number	Site Name	State	Delivery Date
103	AMARILLO	TX	11/14/94
104	BILLINGS	MT	11/21/94
105	FARGO	ND	11/28/94
106	ATLANTA	GA	10/24/94
107	GARDEN CITY	KS	01/31/94
108	ANGEL PEAK	NV	12/26/94
109	BOSSIER CITY/SHREVPT	LA	01/02/95
110	SPOKANE	WA	01/09/95
111	BISMARCK	ND	01/16/95
112	WARNER ROBBINS/MACON	GA	12/05/94
113	ROCKVILLE	NE	01/30/95
114	TONOPAH	NV	02/06/95
115	CORPUS CHRISTI	TX	02/13/95
116	KLAMATH FALLS/KENO	OR	02/20/95
117	GETTYSBURG	SD	02/27/95
118	MARIETTA/DOBBINS	GA	01/23/95
119	NORTH PLATTE	NE	03/13/95
120	RED BLUFF	CA	03/20/95
121	MIDLAND	TX	03/27/95
122	CEDAR CITY	UT	04/03/95
123	FORT SMITH	AR	04/10/95
124	BRISTON/JOHNSON/KINGSPORT	TN	04/17/95
125	SAINT ALBANS	VT	04/24/95
126	FRESNO	CA	05/01/95
127	D/FT WORTH (4TH)	TX	05/08/95
128	ASHTON	ID	05/15/95
129	LOVELL	WY	05/22/95
130	WILIMINGTON	NC	05/29/95
131	MARTINSBURG	WV	06/05/95
132	BATTLE MOUNTIAN	NV	06/12/95
133	MESA RICA	NM	06/19/95
134	CASCADE	ID	06/26/95
135	GALLUP	NM	07/03/95
136	JACKSON	MS	07/10/95
137	LUSK	WY	07/17/95
138	WASHINGTON	DC	07/24/95

ASDE-3 LOCATION AND COST DATA

Mr. CARR. Please update the ASDE-3 location and cost table shown on page 732 of last year's hearing record.

[The information follows:]

<i>Site Location</i>	<i>Implementation (commissioning)</i>
Pittsburgh, Pa	05/21/93
FAA Academy ¹	N/A
FAA Technical Center ²	N/A
Atlanta	05/23/93
Portland	06/15/93
Boston	09/30/93
New York—Kennedy	10/31/93
Philadelphia	10/31/93
Los Angeles ⁴	10/31/93
Detroit	11/30/93
Cleveland	11/30/93
Denver (DVX) ^{3, 4}	12/15/93
Dallas/Ft. Worth	12/31/93
Seattle	12/31/93
Miami	12/31/93
Los Angeles ⁴	12/31/93
St. Louis	03/15/94
San Francisco	03/31/94
Baltimore	03/31/94
Kansas City	04/15/94
Memphis	05/30/94
Houston ⁴	06/30/94
Minneapolis	08/15/94
Anchorage	08/15/94
Andrews AFB	09/30/94
Chicago	10/30/94
New Orleans	12/15/94
Houston ⁴	01/31/95
Dulles	03/31/95
Newark	03/31/95
Washington National	04/30/95
Tampa	05/30/95
New York—La Guardia	11/30/95

¹ FAA Training/Field Support/Depot Support Facility.

² FAA R&D system for Runway Incursion.

³ Second System to be procured in FY 1993.

⁴ Dual Sensor Facilities.

Note.—The total program cost for the 33 systems at 30 locations is \$159.1 million, or an average cost of approximately \$4.3 million per site. The \$49.5 million added in FY 1993 to procure additional systems is not included in the total program costs, nor is any additional money required for site preparation for these sites.

AIR TRAFFIC CONTROL TOWER REPLACEMENTS—PHASE ONE

Mr. CARR. You are requesting \$100,000 for first phase funding for each of 10 air traffic control towers to be replaced. Please list these locations with their associated benefit-cost ratios for ATCT replacement or other similar justification.

[The information follows:]

Benefit cost ratios are not used in the determination of the requirements for replacement of control towers. Tower improvement and replacement procedures are contained in FAA Order 6480.17, "Terminal Facility/Relocation Survey and Evaluation Handbook. The procedures contained in the handbook include mission performance, facility life expectancy, national and regional evaluation and cost estimates.

The 10 facilities are: Merrill Field, Anchorage, AK; Oakland, CA; Ft. Lauderdale EXEC, FL; Salina, KS; Manchester, NH; Port Columbus, OH; San Angelo, TX; Newport News, VA; Roanoke, VA; and Everett, WA.

RATIONALE FOR TOWER REPLACEMENT SITES

Mr. CARR. Of these 10 tower replacement sites, 4 are not shown on last year's list of unfunded sites meeting the FAA's criteria for facility replacement (p. 754): Merrill, AK; Columbus, OH; Oakland, CA; and Newport News, VA. Several other candidate towers on last year's unfunded list were not included for fiscal year 1994 funding. What caused these towers to be funded in fiscal year 1994 instead of others on the unfunded list?

[The information follows:]

Each year the regions evaluate candidate locations and new facilities may be added to the candidate lists. Priorities may change each year due to on-site evaluations by regional office and headquarters personnel.

TOTAL COST FOR ATC TOWER REPLACEMENTS

Mr. CARR. What is the total cost of each of these 10 towers?

[The information follows:]

The total cost of the 10 towers is as follows:

	<i>Amount</i>
Merrill Field, Anchorage, AK	\$6,321,100
Oakland, CA	10,722,700
Ft. Lauderdale (Executive), FL	5,071,800
Salina, KS	3,739,500
Manchester, NH	4,866,700
Port Columbus, OH	12,254,200
San Angelo, TX	4,806,600
Newport News, VA	3,445,800
Roanoke, VA	6,877,000
Everett, WA	4,910,100

TOWER REPLACEMENTS—PROGRAM AND FINANCIAL DATA

Mr. CARR. Please provide data for these replacement towers similar to that shown on pages 741-747 of last year's hearing record.

[The information follows:]

Location	Costs	Calendar Year 1992 OPS	Age
Salt Lake City, UT	<u>1/</u> \$2,187,000 <u>2/</u> (9,864,200)	320,418	32
Covington, KY	<u>4/</u> \$1,877,000 <u>2/</u> (10,713,000)	305,554	23
Portland, OR	<u>5/</u> \$7,724,000 <u>2/</u> (8,724,000)	270,423	35
Islip, NY	<u>1/</u> \$1,993,000 <u>2/</u> (6,579,800)	199,562	32
Chicago (Palwaukee), IL	<u>1/</u> \$1,305,000 <u>2/</u> (5,082,700)	143,314	25
Santa Barbara, CA	<u>4/</u> \$4,725,000 <u>2/</u> (6,638,000)	167,130	29
St Paul, MN	<u>1/</u> \$1,585,000 <u>2/</u> (5,061,200)	152,378	61
Dallas (Addison), TX	<u>1/</u> \$1,324,000 <u>2/</u> (5,017,700)	176,312	32
Louisville, KY	<u>4/</u> \$7,437,000 <u>2/</u> (10,437,000)	153,300	23
Moses Lake, WA	<u>1/</u> \$1,038,000 <u>2/</u> (3,816,000)	167,162	41
Little Rock, AR	<u>1/</u> \$1,601,000 <u>2/</u> (7,581,000)	169,886	21
Bangor, ME	<u>1/</u> \$1,579,000 <u>2/</u> (4,313,400)	110,523	39
Klamath Falls, OR	<u>5/</u> \$1,944,100 <u>2/</u> (2,852,100)	83,930	34
Worcester, MA	<u>1/</u> \$ 706,900 <u>2/</u> (2,114,900)	67,870	41

Topeka, KS	<u>1/</u>	\$ 974,000	47,890	39
	<u>2/</u>	(3,471,000)		
Anchorage (Merrill), AK	<u>3/</u>	\$ 100,000	216,461	31
	<u>2/</u>	(6,321,100)		
Salina, KS	<u>3/</u>	\$ 100,000	71,626	38
	<u>2/</u>	(3,739,500)		
Newport News, VA	<u>3/</u>	\$ 100,000	174,708	40
	<u>2/</u>	(3,445,800)		
Roanoke, VA	<u>3/</u>	\$ 100,000	109,340	41
	<u>2/</u>	(6,877,000)		
Columbus, OH	<u>3/</u>	\$ 100,000	230,655	22
	<u>2/</u>	(12,254,200)		
Manchester, NH	<u>3/</u>	\$ 100,000	105,083	27
	<u>2/</u>	(4,866,700)		
Everett, WA	<u>3/</u>	\$ 100,000	178,010	20
	<u>2/</u>	(4,910,100)		
Ft. Lauderdale, FL	<u>3/</u>	\$ 100,000	237,860	20
	<u>2/</u>	(5,071,800)		
San Angelo, TX	<u>3/</u>	\$ 100,000	81,776	37
	<u>2/</u>	(4,806,600)		
Oakland, CA	<u>3/</u>	\$ 100,000	414,412	31
	<u>2/</u>	(10,722,700)		

1/ Funding 1993

2/ Total Cost

3/ First Year Funding 1994

4/ Incremental Year Funding 1993

5/ Incremental Out Year Funding

Merrill Field, Anchorage, AK

The Merrill field control tower handles in excess of 250,000 airport operations in a 120 square foot tower cab that was commissioned 30 years ago. Tower equipment is scattered throughout the limited console space. There is no room to establish additional positions to meet the volume of traffic in the Anchorage area. The physical structure is in deteriorating condition. Water leaks are prevalent. Environmental systems are inadequate and in poor repair. There is no automatic fire protection and evacuation procedures require the use of an outside ladder to the roof of the airport building and a jump.

Oakland, CA

Oakland towers (North and South) are a level IV limited radar facility. The South Tower was constructed in 1962 and modernized in 1987. The South tower is owned by the Oakland Airport Authority. The North Tower was constructed in 1972 to eliminate the runway visibility problem created when a large hangar was built. The final approach path and the first 400 feet of runway are not visible from the tower. Portions of several movement areas near the runways are not visible from the tower. The break room cannot be modernized or redesigned and there is no space for training or de-briefing. Controllers must cross a very active taxiway to get to the North Tower. There is no available space for expansion of the control facility. The single proposed new tower will replace both the existing North and South Towers.

Ft. Lauderdale EXEC, FL

The tower was constructed in 1972. It is only 34 feet in height and visibility problems exist near the approach ends of runways 26 and 31. This particular situation also results in radio blind spot problems. Increasing the height of the tower is not cost beneficial.

Salina, KS

Salina ATCT is a an Air Force designed tower built in 1955. The Air Force considered it obsolete when the base was closed in 1965. The present structure is in a constant state of repair. There is no room for expansion or additional equipment. Communication systems are poor due to interference. Many of the wiring diagrams have been lost or destroyed. Environmental systems are substandard.

Manchester, NH

Manchester tower was constructed in 1961 and is located within the airport owned terminal. It is leased from the Airport Authority. Replacement is necessary due to age, deterioration and obsolescence. Despite sponsor attempt to correct problems, rain leaks have caused damage and ruined equipment. A new terminal is being constructed and is expected to be completed in September. The new terminal will create visual obstructions to portions of a heavily used taxiway. Also future airport plans call for creation of freight cargo facility.

Port Columbus, OH

This a Tower/TRACON replacement. The present Air Traffic and Airway Facilities work areas are inadequate to meet both current and future requirements. Administrative areas are spread all over the airport. Expansion of the existing quarters is prohibited by structural limitations. The tower has no space available for any new additional equipment. Overriding operational considerations dictate a replacement of the TRACON base building as part of this project.

San Angelo, TX

The facility is 31 years old and has deteriorated and is badly in need of replacement. Environmental systems are totally inadequate. Meetings have to be held in city conference rooms. The cab is in poor condition and water leaks into the entire structure. During spring and early summer, blowing dust penetrates the building forming dirt layers on the consoles and equipment.

Newport News, VA

The facility is thirty years old. It is located on top of the old terminal building. It has structural cracks, power deficiencies and heating and air conditioning problems. The tower cab is too low to see portions of the movement area. Aircraft on final approach cannot be seen due to a line of trees that restrict the controller view. Noise and fumes are a constant problem since the tower is only 38 feet above the ground. There is no breakout area and the kitchen is in the tower. Access to the tower is either through the airline baggage area or across the roof. The tower does not meet OSHA standards. The tower is in terrible physical shape. The airport authority is completing a major new terminals and is working with the airlines and air taxi operators to promote additional air service.

Roanoke, VA

The height of the cab is 38 feet. Depth perception barely meets FAA standards. Two sections of the taxiways are not visible from the tower. Local control must constantly question the sequence as the aircraft prepare for takeoff. Half of the scheduled air carrier/air taxi parking area is not visible from the tower and 40% of the General Aviation parking area is not visible.

Everett, WA

Controllers are unable to observe aircraft on portions of the airport which are movement areas created by recent construction. The present cab is too small for additional equipment such as D-BRITE, FDIO, etc. The addition of a parallel runway and the increase in IFR opposite direction traffic to runway 16R has increased the areas which need to be scanned by the local controller.

LISTING OF ATC FACILITY MODERNIZATION LOCATIONS

Mr. CARR. Please list the 62 ATC facilities to be modernized with your \$25,212,000 request for ATC Facilities Modernization.

[The information follows:]

Albany, NY	Janesville, WI
Alton, IL	Kansas City, MO
Atlantic City, NJ	Key West, FL
Augusta, GA	Las Vegas, NV
Baton Rouge, LA	Lawrence, MA
Bellevue, NE*	Lincoln, NE*
Bellevue, NE*	Lincoln, NE*
Bethel, AK	Memphis, TN
Beverly, MA	Midland, TX
Boston (ATCT), MA	Nashville, TN*
Boston (TRACON), MA	Nashville, TN*
Burlington, VT	New Haven, CT
Carbondale, IL	Norwood, MA
Cedar Rapids, IA	Olathe, KS
Charlotte, NC	Ontario, CA
Columbia, MO	Orlando, FL
Covington, KY	Rapid City, SD
Crystal, MN	Salem, OR
Danbury, CT	Salt Lake City, UT
Decatur, IL	San Diego, CA
Des Moines, IA*	Santa Monica, CA
Des Moines, IA*	Sioux City, IA
Dubuque, IA	Springfield, MO*
El Paso, TX	Springfield, MO*
Fort Wayne, IN	Various SW facilities
Ft. Pierce, FL	Waterloo, IA*
Grand Junction, CO	Waterloo, IA*
Grand Forks, ND	Wichita (TRACON), KS
Hartford, CT	Wichita (ATCT), KS*
Honolulu, HI	Wichita (ATCT), KS*
Houston, TX	Williamsport, PA

* Two separate modernization projects will be accomplished at this facility.

DATA ON TOWER REPLACEMENTS

Mr. CARR. Please update the data on tower replacements shown on page 740 of last year's hearing record by providing data for fiscal years 1992-1994.

[The information follows:]

Location	Fiscal year—			Unfunded future years
	1992	1993	1994	
San Diego, CA.....	4,500,000			
Chicago (Midway), IL.....	11,900,000			
Kansas City, Mo.....	11,500,000			
Santa Barbara, CA.....	1,913,000	4,725,000		
Houston (Hobby), TX.....	6,600,000			
Pontiac, MI.....	3,890,000			
Syracuse, NY.....	7,600,000			
Minneapolis, MN.....	9,115,000			
Covington, KY.....	7,123,000	1,877,000		
Louisville, KY.....	3,000,000	7,437,000		
Buffalo, NY.....	500,000			
San Juan, PR.....	7,728,000			
Klamath Falls, OR.....	908,000			1,944,100
Beaumont, TX.....	3,196,000			
Topeka, KS.....		974,000		2,497,300
St. Paul, MN.....		1,585,000		3,476,200

Location	Fiscal year—			Unfunded future years
	1992	1993	1994	
Worcester, MA		706,900		1,408,000
Salt Lake City, UT		2,187,000		7,677,200
Little Rock, AR		1,601,000		5,980,100
Islip, NY		1,993,000		4,586,800
Palwaukee, IL		1,305,000		3,777,700
Bangor, ME		1,579,000		2,734,400
Portland, OR	1,000,000			7,724,100
Dallas (Addison), TX		1,324,000		3,693,700
Moses Lake, WA		1,038,000		2,778,000
Kissimmee, FL	100,000			
Wenatchee, WA	1,000,000			
Jackson, TN	427,000			
Mobile (Brookley), AL	1,000,000			
Stewart, NY	3,000,000			
Kenosha, WI	1,000,000			
Merrill, AK			100,000	6,221,100
Salina, KS			100,000	3,639,500
Newport News, VA			100,000	3,345,800
Roanoke, VA			100,000	6,777,000
Columbus, OH			100,000	12,154,200
Manchester, NH			100,000	4,766,700
Everett, WA			100,000	4,810,100
Ft. Lauderdale (Executive), FL			100,000	4,971,800
San Angelo, TX			100,000	4,706,600
Oakland, CA			100,000	10,622,700

TOWER REPLACEMENTS—FUNDING AND CONSTRUCTION STATUS

Mr. CARR. Please update the funding and construction status information for tower replacement projects as shown on pages 749–753 of last year’s hearing record.

[The information follows:]

Fiscal Year 1987

Albuquerque, NM

Fiscal Year 1987 \$6,657,800

Fiscal Year 1988 \$ 538,900

Status: Construction complete

Schedule: Commissioning March 1994

Remarks: Construction Funds Obligated. Waiting delivery of ICSS equipment.

Buffalo, NY

Fiscal Year 1987 \$5,894,900

Fiscal Year 1988 \$ 477,100

Status: Construction complete

Schedule: Commissioning February 1994

Remarks: Construction Funds Obligated. Waiting delivery of ICSS equipment.

Norfolk, VA

Fiscal Year 1987 \$7,377,700

Fiscal Year 1988 \$ 597,200

Status: Construction complete. Electronic installation underway.

Schedule: Commissioning October 1993.

Remarks: Construction Funds Obligated. Waiting delivery of ICSS equipment.

Monroe, LA

Fiscal Year 1987 \$3,223,000

Fiscal Year 1988 \$ 286,800

Status: Construction complete

Schedule: Commissioning February 1994

Remarks: Construction Funds Obligated. Waiting delivery of ICSS equipment.

Fiscal Year 1988

Atlanta Fulton County, GA \$4,297,000

Status: Construction complete

Schedule: Commissioning March 1994

Remarks: Construction Funds Obligated. Waiting delivery of ICSS equipment.

St. Petersburg, FL \$4,243,000

Status: Under construction.

Schedule: Pending resolution of contract problem

Remarks: Construction Funds Obligated. 8 A construction contractor defaulted.

New Orleans, LA \$6,697,000

Status: Under Construction

Schedule: Commissioning July 1994.

Remarks: Construction Funds Obligated. Will wait for delivery of ICSS equipment.

Sioux City, IA \$3,935,000

Status: Complete

Schedule: Commissioned January 1992.

Remarks: Construction Funds Obligated

Moses Lake, WA \$765,000

Remarks: Project cancelled. This project was to increase the height and size of the existing tower rather than to build a completely new structure. This procedure has been found infeasible and the project was submitted and approved for construction of a complete new ATCT in the FY-93 budget.

Chino, CA \$3,929,000

Status: Construction complete

Schedule: Commissioning June 1994

Remarks: Construction Funds Obligated. Will wait for delivery of ICSS equipment.

Houston Intercontinental, TX \$10,000,000

Status: Site location and height have been selected.

Schedule: A planned Construction award July 1993. Commissioning July 1996

Remarks: Project was delayed due to site selection problems. A reprogramming action to fund construction has been forwarded to OST to provide necessary funding.

Fiscal Year 1989

Allentown, PA \$6,363,000

Status: Construction funds obligated 4/27/93.

Schedule: Commissioning April 1995.

Windsor Locks, CT \$7,643,200

Status: Site has been selected. Architect/Engineer contractor has completed site adaption engineering.

Schedule: Construction award August 1993. Commissioning July 1995

Detroit Metro, MI \$12,714,600

Status: Complete

Schedule: Commissioned August 1992.

Remarks: Construction Funds Obligated

Fort Smith, AR \$2,339,900 (Partial Funding)

Status: A site has been tentatively selected. Building size requirements are being re-evaluated.

Schedule: Pending size evaluation

Orlando Executive, FL \$3,766,300

Status: Under construction. Will wait for delivery of ICSS equipment.

Schedule: Commissioning August 1994.

San Jose Municipal, CA \$4,673,000

Status: Under Construction

Schedule: Commissioning. June 1994

Remarks: Construction Funds Obligated. Will wait for delivery of ICSS equipment.

Fiscal Year 1990

St. Louis, MO

Fiscal Year 1990 \$2,300,000

Fiscal Year 1991 9,954,200

Status: Site adaption Engineering is underway.

Schedule: Construction award March 1995. Commissioning June 1997

La Guardia, NY

Fiscal Year 1990 \$10,049,000

Fiscal Year 1988 114,600

Status: Site selection study is underway.

Schedule: Pending site selection

Newark, NJ

Fiscal Year 1990 \$2,200,000

Fiscal Year 1991 9,103,200

Status: Site selection is underway.

Schedule: Pending site selection

Chicago O'Hare, IL

Fiscal Year 1990 \$ 2,200,000

Fiscal Year 1991 15,493,000

Status: Construction funds obligated 4/26/93. Contract award was delayed pending resolution of a contractor protest.

Schedule: Commissioning January 1996.

Helena, MT

Fiscal Year 1990 \$ 351,000

Fiscal Year 1991 1,738,700

Status: Design Complete

Schedule: Construction award August 1993. Commissioning December 1994

Montgomery, AL

Fiscal Year 1990 \$ 900,000

Fiscal Year 1991 \$4,344,100

Status: Engineering is underway.

Schedule: Construction award August 1993. Commissioning November 1994.

Roswell, NM

Fiscal Year 1990 \$ 800,000

Fiscal Year 1991 3,866,700

Status: Engineering is underway.

Schedule: Construction award November 1993. Commissioning July 1996.

Fiscal Year 1991

Los Angeles, CA \$21,000,000

Status: Construction contract has been advertised

Schedule: Construction award May 1993. Commissioning November 1995.

San Diego Lindbergh, CA

Fiscal Year 1991 \$1,500,000

Fiscal Year 1992 4,500,00

Status: The site has been selected and site adaption engineering is underway.

Schedule: Construction award November 1993. Commissioning June 1995.

Chicago Midway, IL

Fiscal Year 1991 \$ 1,500,000

Fiscal year 1992 11,900,000

Status: Site selection is underway

Schedule: Construction award March 1994. Commissioning November 1996.

Kansas City International, MO

Fiscal Year 1991 \$ 2,000,000

Fiscal Year 1992 11,500,000

Status: Site adaption engineering is underway.

Schedule: Construction start May 1994. Commissioning Dec.1996

Pontiac, MI

Fiscal Year 1991 \$1,600,000

Fiscal Year 1992 3,890,000

Status: Preliminary site selection studies have been made.

Schedule: Construction award March 1994. Commissioning November 1996.

Remarks: Added at Congressional Direction

Minneapolis, MN

Fiscal Year 1991 \$3,151,000

Fiscal Year 1992 9,115,000

Status: Conceptual design is complete and is being reviewed.

Schedule: Construction award March 1994. Commissioning March 1997.

Remarks: Added at Congressional Direction

Fiscal Year 1991 (con't)

Covington, KY

Fiscal Year 1991 \$1,713,000

Fiscal Year 1992 7,123,000

Fiscal Year 1993 1,877,000

Status: Construction contract for tower only (without base building) has been advertised. A study to determine whether to relocate the TRACON or just the administrative base building is underway.

Schedule: Construction award June 1993. Commissioning June 1995.

Syracuse, NY

Fiscal Year 1991 \$1,900,000

Fiscal Year 1992 7,600,000

Status: Preliminary site selection has been made.

Schedule: Construction start June 1994. Commissioning January 1996.

Remarks: Added at Congressional Direction

Houston Hobby, TX

Fiscal Year 1991 \$2,600,000

Fiscal Year 1992 6,600,000

Status: A Preliminary site selection has been made.

Schedule: Construction start April 1994. Commissioning December 1996

Remarks: Added at Congressional Direction

San Juan, PR

Fiscal Year 1991 \$4,000,000

Fiscal Year 1992 7,728,000

Status: A contract has been drafted with airport sponsor to construct the tower. Congressional approval was necessary to complete the contract with sponsor.

Schedule: Construction start March 1993. Commissioning February 1995.

Remarks: Construction Funds Obligated. Added at Congressional Direction

Beaumont, TX

Fiscal Year 1991 \$5,000,000

Fiscal Year 1992 3,196,000

Status: Preliminary site selection studies have been made.

Schedule: Construction start June 1994. Commissioning December 1996.

Remarks: Added at Congressional Direction

Fiscal Year 1992

Santa Barbara, CA

Fiscal Year 1992 \$1,913,000

Fiscal Year 1993 4,725,000

Status: The site has been selected and site adaption engineering is underway.

Schedule: Construction Start October 1993. Commissioning April 1995.

Louisville, KY

Fiscal Year 1992 \$3,000,000

Fiscal Year 1993 7,437,000

Remarks: Construction Funds Obligated. Added at Congressional Direction

Status: A contract has been signed with the airport sponsor to construct the control tower and TRACON.

Schedule: Construction start August 1993. Commissioning May 1995.

Klamath Falls, OR

Fiscal Year 1992 \$ 908,000

Cost to Complete 1,944,100

Status: Site investigation and preliminary engineering have begun.

Schedule: Construction start October 1994. Commissioning February 1996.

Portland, OR

Fiscal Year 1992 \$1,000,000

Cost to Complete 7,724,000

Remarks: Added at Congressional Direction

Status: A site has been selected by the Region and submitted to the airport sponsor for concurrence.

Schedule: Construction start October 1994. Commissioning October 1996.

Kissimmee, FL

Fiscal Year 1992 \$100,000

Remarks: Added at Congressional Direction. Funds will be issued to the sponsor as a grant.

Wenatchee, WA

Fiscal Year 1992 \$1,000,000

Remarks: Added at Congressional Direction. Funds will be issued to the sponsor as a grant.

Jackson, TN

Fiscal Year 1992 \$427,000

Remarks: Added at Congressional Direction. Funds will be issued to the sponsor as a grant.

Fiscal Year 1992 (con't)

Mobile Brookley, AL

Fiscal Year 1992 \$1,000,000

Remarks: Added at Congressional Direction

Stewart

Fiscal Year 1992 \$3,000,000

Fiscal Year 1993 1,700,000

Remarks: Added at Congressional Direction

Status: Site selection is underway

Schedule: Pending site selection

Kenosha, WI

Fiscal Year 1992 \$1,000,000

Remarks: Added at Congressional Direction. Funds will be used to furnish and install equipment in sponsor constructed tower.

Fiscal Year 1993

Topeka, Ks

Fiscal Year 1993 \$1,674,000

Cost to complete \$1,797,300

St. Paul, MN

Fiscal Year 1993 \$2,285,000

Cost to complete \$2,776,200

Worcester, MA

Fiscal Year 1993 \$1,406,900

Fiscal year 1995 \$ 708,000

Salt Lake City, UT

Fiscal Year 1993 \$2,887,000

Cost to complete \$6,977,200

Little Rock, AR

Fiscal Year 1993 \$2,301,000

Cost to complete \$5,280,100

Islip, NY

Fiscal Year 1993 \$2,693,000

Cost to complete \$3,886,800

Palwaukee, IL

Fiscal Year 1993 \$2,005,000

Cost to complete \$3,077,700

Bangor, ME

Fiscal Year 1993 \$2,279,000

Cost to complete \$2,034,400

Dallas Addison, TX

Fiscal Year 1993 \$2,024,000

Cost to complete \$2,993,700

Moses Lake, WA

Fiscal Year 1993 \$1,738,000

Cost to complete \$2,078,000

TOWER REPLACEMENT CANDIDATE LISTING

Mr. CARR. Please update the tower replacement candidate list shown on page 754 of the last year's hearing record.
[The information follows:]

For fiscal year (FY) 1994, 31 locations were identified as potential candidates for facility replacement. Two of these were included in the FAA's FY 1993 budget request and were funded by Congress in the FY 1993 Appropriations. 10 are included in the FY 1994 budget request. The remaining candidates are listed below. Benefit-cost ratios are not applicable to tower replacement projects.

	<i>Future budget</i>
Birmingham, AL	\$11,034,700
Tucson, AZ	7,702,100
Wilmington, DE	10,810,400
Vero Beach, FL	5,707,900
Dubuque, IA	4,307,000
East St. Louis IL	3,370,800
Hutchinson, KS	3,712,800
Bedford, MA	4,384,200
Hyannis, MA	3,800,600
Columbia, MO	4,524,200
St. Joseph, MO	4,374,200
Grand Island, NE	4,363,700
Tulsa, OK	13,676,600
Medford, OR	3,628,900
Harlingen, TX	4,987,600
Stinson Field, TX	4,420,500
Charlottesville, VA	3,745,800
Richmond, VA	2,072,700
Salt Lake City, UT	17,538,000

STATUS OF ATCT ESTABLISHMENT SITES

Mr. CARR. Please provide a status report on the four ATCT establishment sites funded in fiscal year 1993 (Newburgh, NY; Redmond, OR; Pullman Moscow, WA/ID; and Bellingham, WA).
[The information follows:]

Newburgh (Stewart), NY:

A site has been tentatively selected by FAA and lease negotiations are underway with the sponsor.

The estimated schedule is as follows:

Construction Start: June 1995.

Construction complete: June 1996.

Commissioning: December 1996

Redmond, OR:

A site selection report is at the 90% review level.

The estimated schedule is as follows:

Construction Start: May 1994.

Construction complete: August 1995.

Commissioning: July 1996.

Pullmond, Moscow, WA/ID:

A site selection coordination meeting with the airport sponsor has been scheduled in May and the site selection survey has been scheduled for June 1993.

The estimated schedule is as follows:

Construction Start: August 1994.

Construction complete: August 1995.

Commissioning: July 1996.

Bellingham, WA:

The site selection report has been completed.

The estimated schedule is as follows:

Construction Start: February 1995.

Construction complete: February 1996.

Commissioning: November 1996.

ILS RECOMMENDATIONS (NOT INCLUDED IN THE BUDGET)

Mr. CARR. Please provide a listing of ILS systems recommended for funding in fiscal year 1994 but not included in the President's budget, similar in format to that shown on pages 775-776 of last year's hearing record.

[The information follows:]

	Project	Region	Location	Runway
94A0039	1001.....	AC	Oklahoma City, OK.....	
9410088	1006.....	EA	Allentown, PA.....	24
9410111	1003.....	EA	Camp Springs, MD.....	01R
9410112	1004.....	EA	Camp Springs, MD.....	19L
9410085	1002.....	EA	Newark, NJ.....	22R
9410082	1001.....	EA	Philadelphia, PA.....	27L
9410083	1005.....	EA	Syracuse, NY.....	32
94C0355	1003.....	GL	Akron Canton, OH.....	05
94C0357	1002.....	GL	Dayton, OH.....	06R
94C0356	1001.....	GL	Scott AFB, IL.....	32
94E0136	1003.....	NE	Nantucket, MA.....	06
94E0366	1006.....	NE	Rochester, NH.....	32
94E0386	1002.....	NE	Rockland, ME.....	13
94E0439	1005.....	NE	Windsor Locks, CT.....	33
94S0859	1001.....	NM	Billings, MT.....	27R
94S0594	1004.....	NM	Renton, WA.....	15
94S0593	1003.....	NM	Sea Boeing, WA.....	31
9470457	1005.....	SO	Fort Lauderdale, FL...	31
9470512	1003.....	SO	Knoxville, TN.....	23L
9470459	1006.....	SO	Orlando, FL.....	18L
9470511	1001.....	SO	Orlando, FL.....	35R
9470455	1004.....	SO	Tampa, FL.....	36R
9420899	1007.....	SW	Abilene, TX.....	17R
9420900	1003.....	SW	Amarillo, TX.....	22
9420291	1005.....	SW	El Paso, TX.....	26L
9420905	1011.....	SW	Fort Smith, AR.....	07
9420898	1010.....	SW	Harlingen, TX.....	31
9420902	1014.....	SW	Houston, TX.....	22
9420750	1006.....	SW	Little Rock, AR.....	04R
9420919	1009.....	SW	Midland, TX.....	34L
9420923	1008.....	SW	Oklahoma City, OK.....	35L
9420922	1002.....	SW	Shreveport, LA.....	05
9420912	1004.....	SW	Tulsa, OK.....	35L
9420628	1013.....	SW	Tyler, TX.....	04
4BOW006	1001.....	XX	Buckeye, CA.....	
4BOW031	1001.....	XX	Mesa, AZ.....	

4BOW030	1001.....XX	Santa Barbara, CA.....
94A0040	1001.....AC	Oklahoma City, OK.....
9430217	1001.....CE	Des Moines, IA.....30R
9410097	1003.....EA	Albany, NY.....19
9410090	1009.....EA	Baltimore, MD.....33L
9410092	1004.....EA	Chantilly, VA.....01L
9410094	1006.....EA	Chantilly, VA.....19L
9410093	1005.....EA	Chantilly, VA.....19R
9410095	1006.....EA	New York JFK, NY.....04L
9410096	1010.....EA	Newburgh, NY.....09
9410091	1008.....EA	Norfolk, VA.....05
94A0041	1001.....AC	Oklahoma City, OK.....
9430219	1002.....CE	St. Louis, MO.....14R
9430220	1003.....CE	St. Louis, MO.....32L
94C0280	1003.....GL	Detroit, MI.....22
94C0281	1004.....GL	Detroit, MI.....21L
94E0262	1001.....NE	Boston, MA.....33L
94E0290	1002.....NE	Windsor Locks.....24
9470448	1007.....SO	Atlanta, GA.....27L
9470442	1004.....SO	Charlotte, NC.....18R
9470444	1005.....SO	Orlando, FL.....18R
9470516	1001.....SO	Orlando, FL.....17L
9470446	1006.....SO	Tampa, FL.....18L
9420733	1003.....SW	Dallas Ft. Worth, TX..36L
9420736	1004.....SW	Dallas Ft. Worth, TX..16R
9420742	1005.....SW	Dallas Ft. Worth, TX..34R
9420811	1007.....SW	Houston, TX.....27
9420810	1006.....SW	Oklahoma City, OK....35R
9420812	1008.....SW	Shreveport, LA.....14
9410347	9012.....EA	Baltimore, MD.....15R
9410346	9011.....EA	New York JFK, NY.....04L
9410114	5001.....EA	Flushing LGA, NY.....13
*9470453	1001.....SO	Fort Lauderdale, FL...09R
*9470463	1003.....SO	Kennesaw, GA.....27
*9470461	1002.....SO	Nashville, TN.....19

* - Upgrade Partial to Full ILSs

HOUSING UNITS

Mr. CARR. Please provide information on housing units for fiscal year 1994 funding, similar to that provided on page 789 of last year's hearing record.

[The information follows:]

ALASKA

Bethel—\$8,600,000 to complete funding for the construction of thirty-two (twenty-two 3-bedroom, 2-bath single family and ten 2-bedroom, 2-bath townhouse style) housing units. All housing units will have vehicle parking garages. Townhouse style units will provide multi-functional support including small families, single employees, maintenance crews, and transient employees.

A new community service facility will be constructed. Energy efficient arctic designs will be utilized. Supporting water, sewer, electrical, and heating fuel systems will be replaced. Real estate acquisition will be included. Asbestos abatement and hazardous materials remediation will be performed as necessary. New roadways, landscaping, and other ancillary site work will be accomplished. Unit cost of 3-bedroom housing units is \$305,000 each; 2-bedroom townhouse units is \$225,000 each. Total cost of utilities, real estate, and other ancillary site work is \$3,240,000.

Cold Bay—\$2,900,000 to complete funding for the construction of fifteen (four 3-bedroom, 2-bath single family and eleven 2-bedroom, 2-bath townhouse style) housing units. All housing units will have vehicle parking garages. Townhouse style units will provide multi-functional support, including small families, single employees, maintenance crews, and transient employees. A new community service facility will be constructed. Energy efficient arctic designs will be utilized. Supporting water, sewer, electrical, and heating fuel systems will be replaced. Real estate acquisition will be included. Asbestos abatement and hazardous materials remediation will be performed as necessary. New roadways, landscaping, and other ancillary site work will be accomplished. Unit cost of the 3-bedroom housing units is \$330,000; 2-bedroom townhouse style units is \$227,000 each. Total cost of utilities, real estate, and other ancillary site work is \$1,583,000.

UNITED STATES VIRGIN ISLANDS

St. Croix—\$2,728,450 to accomplish construction of ten (six 3-bedroom, 2-bath and four 2-bedroom, 2-bath) multi-family housing units with open parking, support infrastructure and landscaping, to replace units destroyed by Hurricane Hugo in 1989. All units will be flats, and four of the units will meet handicapped accessibility requirements. The units will be designed to accommodate families. Water, sewer, and electrical service will be provided. Units will be total electric. Housing units will be equipped with cisterns and a rainwater catchment system to insure water supply (which method of supply is routine on the island). Outdoor wellness facilities will be constructed. Land will be provided at no cost by the government of the United States Virgin Islands. The estimated average construction cost per unit, exclusive of Architectural and Engineering and infrastructure costs is \$177,284. The estimated costs of utilities and other ancillary work is \$955,610.

St. Thomas—\$4,257,472 to accomplish construction of sixteen (eight 3-bedroom, 2-bath and eight 2-bedroom, 2-bath) multi-family housing units with open parking, supporting infrastructure and landscaping, to replace units destroyed by Hurricane Hugo in 1989. All units will be flats, and four of the units will meet handicapped accessibility requirements. The units will be designed to accommodate families. Water, sewer, and electrical service will be provided. Units will be total electric. Housing will be equipped with cisterns. An existing rainwater catchment system will be repaired. The cistern and catchment system water supply are routine on the island. Remaining debris from hurricane damaged units must be removed from the site. Outdoor wellness facilities will be constructed. Land will be provided at no cost by the government of the United States Virgin Islands. The estimated average construction cost per unit, exclusive of Architectural & Engineering and infrastructure is \$172,960. The estimated costs of utilities and other ancillary work is \$1,490,112.

SEI AWARD FEES

Mr. CARR. Please update the table on SEI award fees, as shown on page 790 of last year's hearing record.

[The information follows:]

SEI AWARD FEE PERFORMANCE

Period	Total available	Actual fee awarded	Actual percent of available fee
1 (2/84-7/84)	\$1,391,655	\$1,058,532	77.5
2 (8/84-1/85)	2,097,138	1,727,810	82.4
3 (2/85-7/85)	3,546,121	2,593,473	73.1
4 (8/85-1/86)	5,372,929	4,037,111	75.2
5 (2/86-7/86)	6,658,405	4,853,093	72.9
6 (8/86-1/87)	7,610,533	5,305,315	69.7
7 (2/87-7/87)	8,628,034	6,542,590	75.8
8 (8/87-1/88)	8,274,915	6,111,022	73.8
9 (2/88-7/88)	7,434,361	5,553,242	74.5
10 (8/88-1/89)	7,266,642	5,296,890	72.9
11 (2/89-7/89)	5,728,225	4,353,451	76.0
12 (8/89-1/90)	5,668,776	4,535,022	80.0
13 (2/90-7/90)	5,570,272	4,539,772	81.5
14 (8/90-1/91)	6,057,680	5,031,510	83.1
15 (2/91-7/91)	6,867,594	6,002,689	87.4
16 (8/91-1/92)	6,376,790	5,668,966	88.9
17 (2/92-7/92)	5,201,578	4,624,203	88.9
18 (8/92-1/93)	4,167,447	4,211,112	91.2
19 (2/93-7/93)	3,753,304		
20 (8/93-1/94)	3,049,446		
	111,171,845	82,050,803	

Note: Updated table includes revisions to prior years' information based on verification of contract records. Adjustments were necessary due to definitization of modifications which created changes in award fee.

SEI STAFFING

Mr. CARR. Please update the SEI staffing table found on page 792 of last year's hearing record.

[The information follows:]

TOTAL SEI STAFFING

Fiscal year	Baseline estimate	Previous estimate ¹	Current	Variance previous years
1984	287	² 333	333	0
1985	490	² 736	736	0
1986	799	² 1,063	1,063	0
1987	977	² 1,133	1,133	0
1988	1,056	² 1,189	1,189	0
1989	1,072	² 1,177	1,177	0
1990	970	² 1,085	1,085	0
1991	872	² 1,045	1,045	0
1992	733	² 882	882	0
1993	530	689	772	+ 83
1994 ³	452	497	347	- 150

¹ The total SEI staffing numbers include Martin Marietta and subcontractor staffing.

² Actuals.

³ Four months (staff months).

Note: The changes in fiscal year 1992 and later years staffing reflect adjustments in anticipated funding. Outyear staffing estimates are based on projected requirements, labor rates and budgets.

TRW CONTRACT

Mr. CARR. Please update data on the TRW systems engineering and technical assistance contract, as shown on pages 792-793 of last year's hearing record.

[The information follows:]

PLANNED FUNDING FOR THE TRW SETA CONTRACT

[Dollars in thousands]

	Fiscal years—		
	1992	1993	1994
Advanced Automation System:			
Staffyears.....	155	117	125
Funding.....	\$22,600	\$17,960	\$20,000
Voice Switching and Control System:			
Staffyears.....	60	60	60
Funding.....	\$8,700	\$8,700	\$9,300
En Route Software Development and Integration Support:			
Staffyears.....	4	9	
Funding.....	\$800	\$1,200	
Traffic Management System:			
Staffyears.....	4	5	5
Funding.....	\$833	\$900	\$1,100
New York TRACON:			
Staffyears.....	2		
Funding.....	\$249		
Interim Support Plan:			
Staffyears.....	7	8	8
Funding.....	\$1,650	\$1,948	\$1,300
Improve Terminal Automation:			
Staffyears.....	4	4	
Funding.....	\$550	\$550	
Retrofit Remote Maintenance System:			
Staffyears.....	12	14	14
Funding.....	\$1,864	\$1,800	\$1,800
Improve En Route Automation:			
Staffyears.....		2	2
Funding.....		\$500	\$500
D Brite:			
Staffyears.....	1	4	3
Funding.....	\$100	\$400	\$300
Oceanic Automation:			
Staffyears.....			9
Funding.....			\$1,200

AIRWAY SCIENCE INSTITUTIONS

Mr. CARR. Please update the listing of participating airway science institutions as shown on pages 794-796 of last year's hearing record.

[The information follows:]

Airway Science Grants Program

FY	Institution	Grant Status	Award \$	Purpose	Type
82	U/North Dakota	A	4,000,000	F/E	1
83	Hampton U.	A	2,250,000	F/E	
83	U/North Dakota	A	2,750,000	F/E	1
85	Embry-Riddle Aero U.	A	500,000	F	
85	Florida Memorial	A	1,000,000	F	1
85	Middle Tenn State U.	A	871,044	F/E	
85	National U.	A	500,000	F/E	
85	Purdue U.	A	128,958	E	
85	Tennessee State U.	PRGP	800,000	F/E	
85	U/North Dakota	A	1,000,000	E	1
85/86	Texas Southern U.	A	200,000	F/E	
		A	31,188	F/E	2
86	Cal State U.	PR	48,082	E	
86	Delta State U.	A	2,201,100	F/E	1,2
86	Dowling College	A	223,300	F/E	2
86	Eliz. City State U.	A	144,050	E	
86	Florida Memorial	A	2,871,000	F/E	1,2
86	Ohio State U.	A	223,300	F/E	
86	U/North Dakota	A	3,828,000	F/E	1,2
87	Auburn U.	A	220,255	E	
87	Embry-Riddle Aero U.	A	204,400	E	
87	Florida Inst. of Tech	A	1,000,000	F	
87	Florida Memorial	A	2,000,000	E	1
87	Hampton U.	A	300,000	F	
87	Interamerican U. of PR	A	947,312	F/E	
87	Kearney State College	A	162,315	E	
87	Middle State U.	A	90,164	E	
87	National U.	A	500,000	E	
87	Ohio State U.	A	900,000	F	
87	San Jose State U.	A	362,800	E	
87	Southern Illinois U.	A	312,754	E	
87	U/North Dakota	A	3,000,000	F/E	1
88	Auburn University	A	237,500	E	1
88	Embry-Riddle Aero U.	A	1,425,000	F	1
88	Florida Inst. of Tech	A	237,500	E	1
88	Florida Memorial	A	1,425,000	E	1
88	Polytechnic U.	A	1,425,000	E	1,4
88	U/North Dakota	A	475,000	E	1
89	Daniel Webster College	A	146,635	E	
89	Dowling College	A	129,265	E	
89	Embry-Riddle Aero U.	A	200,000	E	
89	Metro State U.	A	200,000	E	
89	National U.	PGA	173,735	E	
89	Parks College	A	150,385	E	

- Notes:
- 1 - Congressionally Directed
 - 2 - 4.3% GRH reduction included
 - 3 - 1/6% drug intradiction reduction
 - 4 - Non-AWS project at Congressional direction
 - F - Facilities
 - E - Equipment
 - A - Awarded
 - PA - Pending Application
 - PR - Pending Recognition
 - PGA - Pending Grant Agreement
 - PRGP - Pending Revised Grant Plan

Airway Science Grants Program

FY	Institution	Grant Status	Award \$	Purpose	Type
91	Arizona State U.	A	693,456	E	
91	Central Missouri State U.	A	145,400	F/E	
91	Central Washington U.	A	696,020	E	
91	Chadron State College	A	50,250	E	
91	Daniel Webster College	A	750,000	F	
91	Dowling College	A	210,000	E	
91	Elizabeth City State U.	A	63,000	E	
91	Embry-Riddle Aero U, Florida	A	687,755	E	
91	Embry-Riddle Aero U, Arizona	A	286,945	E	
91	Fairmont State College	A	300,000	E	1,4
91	Florida Inst of Tech.	A	131,000	E	
91	Henderson State U.	A	46,500	E	
91	Interamerican U. of PR	A	424,256	E	
91	Jackson State U.	A	621,075	F/E	
91	Louisiana Tech U.	A	495,000	F/E	
91	Metro State College	A	375,000	E	
91	Ohio State U.	A	225,000	E	
91	Parks College	A	396,800	E	
91	Southern Illinois U.	PGA	623,584	F/E	
91	Texas Southern U.	A	540,300	F/E	
91	U. of Maryland, Eastern Shore	A	744,300	F/E	
91	Utah State U.	A	218,525	F	
91	Funds to be awarded		1,275,834		
92	Daniel Webster College	PA	3,000,000		1
92	Dowling College	A	3,000,000		1
92	Middle Tennessee State U.	PGA	250,000		1
92	Northeast Louisiana U.	A	4,000,000		1
92	North Dakota State U.	PGA	989,000		1
92	Southern University	PR	3,000,000		1
92	U. North Dakota	A	2,000,000		1
92	Funds to be awarded		3,761,000		
93	Central Washington U.	PA	175,000	F	1
93	Dowling College	PA	4,500,000	F/E	1
93	Embry-Riddle Aero U.	PA	11,500,000	F/E	1
93	Henderson State U.	PA	2,235,000	F/E	1
93	Middle Tennessee State U.	PA	556,000	F	1
93	Southern U.	PR	1,925,000	F/E	1
93	U. of Alaska Anchorage	PA	6,884,000	F/E	1
93	U. of North Dakota	PA	2,225,000	E	1
SUBTOTAL			\$99,795,000		

Other Educational Grants

87	Barry U.	A	3,914,000	F/E	1
90	U/North Dakota	A	2,953,890	E	1,3
90	Fairmont State College	A	3,000,000	F/E	1
91	U/North Dakota	A	1,500,000	E	1

SUBTOTAL	\$11,367,890
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TOTAL	\$111,162,890
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F&E ESTIMATING ORDER

Mr. CARR. When was the FAA directive entitled "F&E Estimating Order" last updated?

[The information follows:]

The F&E Cost Estimating Procedures and Summaries Handbook was last updated in 1977. However, we have reviewed and revalidated the information over the years and have determined that a large part of the Handbook is still applicable and provides valid guidance on cost estimate development and methodology.

The F&E Cost Estimating Handbook is supplemented by guidance in the annual Call for Estimates, Facilities and Equipment, Order 2500.55A. Some aspects of cost estimating which have undergone change, such as the method for submitting manpower estimates and automated budget data entry procedures, are addressed in the supplemental guidance as part of the Call for Estimates order.

The FAA is currently finalizing the order which sets forth funding criteria for F&E, operations, and RE&D appropriations. This order will probably require some change to the Cost Estimating Handbook. At that time the order will be fully updated to incorporate other changes that are necessary.

NANTUCKET ISLAND DBRITE

Mr. CARR. Please update the Committee on the FAA's project to provide digital radar data in the tower cab at the control tower on Nantucket Island, Massachusetts.

[The information follows:]

The Nantucket air traffic control tower/display is located on Nantucket Island while its host automation facility is located at Otis Air Force Base on the mainland, separated by a 30 mile water path.

Ongoing design reviews within the FAA Small Business Innovative Research project for the customizing of current, leading edge video compression remoting technology using standard available telephone circuits are progressing toward a September test at the FAA Technical Center. In December 1992 a contract modification was negotiated with the current DBRITE contractor for another remoting alternative approach using standard available telephone circuits.

The FAA remains committed to the implementation of a technical solution by the end of calendar year 1993.

FAA ORDER ON FUNDING CRITERIA

Mr. CARR. Has the FAA ever finalized its FAA Order regarding funding criteria for F&E, operations, and R, E&D appropriations? If so, please provide a copy of that order for the record.

[The information follows:]

The FAA finalized the funding criteria order covering the Operations, Facilities and Equipment, and Research, Engineering and Development appropriations on April 9, 1993. A copy of the published order is provided for insertion in the record.

ORDERU.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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FUNDING CRITERIA FOR OPERATIONS, FACILITIES AND EQUIPMENT (F&E),
AND RESEARCH, ENGINEERING AND DEVELOPMENT (R,E&D) ACCOUNTS

SUBJ:

1. PURPOSE. This order defines funding criteria for the Federal Aviation Administration's (FAA) Operations, F&E, and R,E&D accounts. The formulation and execution phases of the budget cycle are to be carried out in accordance with the provisions of this order.
2. DISTRIBUTION. This order is distributed to the branch level in Washington headquarters, regions, centers, and to field sectors and facilities.
3. CANCELLATION. Order 2500.8, Operations vs. F&E Funding, dated April 7, 1965, is canceled.
4. EXPLANATION OF CHANGES.
 - a. The major revisions to Order 2500.8 (April 7, 1965) include guidelines for the R,E&D account and an explanation of the differences between "development" funding in the R,E&D and F&E accounts.
 - b. To supplement the guidelines, this order includes three appendices:
 - (1) "Appendix I, A-109 Major System Acquisition Process," to outline the phases of work to be undertaken. This is of particular importance in understanding the differences between development work in the F&E account and that to be accomplished in the R,E&D account.
 - (2) "Appendix II, FAA Funding Matrix for R,E&D and the F&E Accounts," which identifies specific circumstances to show which account is to be used to fund a phase of a program in accordance with OMB Circular A-109.
 - (3) "Appendix III, Summary of Funding Standards and Exceptions for Selected Items of Cost Common in All Accounts," which is intended as a quick reference to funding standards and exceptions on selected costs that are discussed in paragraphs 8, 9, 10, and 11 of this order.
5. POLICY. The FAA is required to use appropriated funds in accordance with the acts of Congress (Public Laws) that provide the appropriations. Criteria are provided in this order so that the terms and intent of those acts are applied consistently and uniformly. Choosing to fund costs from appropriations merely for convenience or for the solution of transient funding problems in a manner inconsistent with the law and this order is not permissible.

SCOPE.

a. This order provides policy guidance for determining the correct account to which obligations and expenditures should be assigned. These guidelines are consistent with the structure of FAA's appropriations and are intended to indicate the correct appropriation to be used for a proposed cost. The language of the appropriations act, which is the primary control, does not usually vary significantly from year to year. Where a project or activity would not be covered by the statutory language, revised appropriation language may be proposed in the President's budget. The Office of Chief Counsel should be consulted for assistance in preparing that proposal. A project or activity covered only by the proposed language may not be carried out unless Congress enacts that language and it becomes a part of the appropriation (Public Law).

b. In general, the Operations account funds the recurring administrative, operating, and maintenance costs of doing the agency's business. The F&E account generally provides for the capital investment for the agency by funding the procurement and installation of new equipment, facilities, and construction projects included in the Aviation System Capital Investment Plan (CIP). The R,E&D account generally provides for research and development (R&D) programs that improve the National Airspace System (NAS) by increasing its safety, security, productivity, capacity, and environmental compatibility to meet the expected air traffic demands of the future.

7 **ACTION.** Full implementation is to be effective on October 1, 1994, (FY 1995). Where appropriate and where criteria can be applied without reprogramming actions or adjustments between appropriations, guidance is to be applied in FY 1994.

8. OPERATIONS ACCOUNT.

a. **Appropriation Language.** As specified in the terms of the typical appropriations act, the Operations appropriation is: "For necessary expenses of the Federal Aviation Administration, not otherwise provided for, including administrative expenses for research and development, establishment of air navigation facilities and the operation and maintenance of aircraft. . .," and for unique provisions as may be specified.

b. **General Application.** On an annually recurring basis, this account funds the administration, operation, repair, and maintenance of FAA activities within the NAS. It finances the personnel and support costs of operating and maintaining the air traffic control system, the flight service facilities, navigation and landing aids, as well as the regulatory and inspection activities which provide for the safety and security of aircraft, flight procedures, and electronic signals from ground-based equipment. Functions or tasks funded include:

(1) Operation and maintenance of FAA equipment and facilities (Air Traffic and Maintenance activities).

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(2) Agency-wide administrative services including: legal services, procurement, recurring real property requirements, material management (including building and equipment leases/rentals, e.g., employee housing)*, office furnishings, supply services, acquisition and management of spare parts, personnel/budget/accounting services (including payroll), communications, administrative automated data processing (ADP), and information resource management (IRM) planning (Direction, Staff and Support; NAS Logistics; and Human Resource Management activities).

* See subparagraph 10.e. for further discussion on leases.

(3) Policy, planning, and executive direction and management of all FAA programs (Headquarters Administration activity).

(4) Leased and purchased administrative and operational telecommunications services (Leased Telecommunications activity).

(5) Development, publication, and administration of safety standards, rules, and regulations applicable to airmen and aircraft operations (Regulations/Certification activity).

NOTE: Direct R&D work leading to the development of standards, rules, and regulations is to be funded in the R,E&D account. See subparagraph 11.d. of this order.

(6) Systematic registration and recordation of airmen and aircraft and performance of the aviation medicine program to maintain a high level of aviation safety (Aviation Standards activity).

(7) Monitoring the accuracy of signals emitted by air traffic control (ATC) devices and aids to air navigation and landing (Aviation Standards activity).

(8) Planning, directing, managing, evaluating, and enforcing civil aviation security (Security activity).

(9) Protecting the safety of passengers, crews, aircraft, and airports (Security activity).

(10) Provides resources necessary to develop the comprehensive plans for the R,E&D and the F&E accounts that are dedicated to achieving the FAA mission and to oversee R,E&D and F&E programs both in-house and contractual. Provides funding for the management and leadership necessary to direct, coordinate, control, and ensure adequacy of FAA plans and programs for system acquisitions, engineering, and management activities of the NAS (NAS Design and Management).

(11) Planning, development, capacity enhancement, and safety certification of public airports (Airport activity).

(12) Support for the FAA work force in the areas of recruiting, training, and human resource management programs (Human Resources Management activity).

FACILITIES AND EQUIPMENT ACCOUNT.

a. Appropriation Language. As specified in the terms of the typical appropriations act, the F&E appropriation is: "For necessary expenses, not otherwise provided for, for acquisition, establishment, and improvement by contract or purchase, and hire of air navigation and experimental facilities and equipment as authorized by the Federal Aviation Act of 1958, as amended (49 U.S.C. App. 1301 et seq.), including...to be derived from the Airport and Airway Trust Fund, . . .," and for unique provisions as may be specified.

b. General Application. On a project basis, this account supports capital improvement projects necessary for the FAA mission by providing funds for establishing, replacing, relocating, and improving NAS equipment and facilities. Projects include the construction, purchase, or lease to purchase of facilities, land, equipment, and software as required. This account funds direct federal salaries and benefits as well as related costs of FAA personnel implementing programs funded by the F&E appropriation. Functions or tasks funded include:

(1) Engineering, Development, Test, and Evaluation (Activity 1, EDT & E).

(a) All projects initiated with F&E funds as part of the FY 1992 budget or prior year F&E budget that may still be in a developmental stage are "grandfathered" and shall remain in the F&E appropriation through completion or termination.

(b) Projects initiated with R,E&D funds that will have F&E end products and have risks mitigated by the time of Key Decision Point (KDP) 3 approval will migrate to the F&E account at that point. Typically, subsequent development work to be done in the F&E account will include full-scale development and could include limited production. Follow on production will then be accomplished under Activity 2, 3, or 4 of this account. When development occurs under the "build" concept -- where within a segment of the project development all alternative design concepts are identified and explored, and an optimum solution selected, demonstrated, tested, and accepted before going to the next "build" level -- work may be retained in the R,E&D account through design integration, i.e., all the way to KDP-4 approval. Under those conditions, funding for a project would then shift to the F&E account for production. Software development initiated in the R,E&D account is a likely example.

(c) Funding for projects that are new initiatives of low technological risk, but that still have pre-KDP-3 work to be done, is also included in the F&E account. With regard to work of this nature and its relationship to the R,E&D account, the F&E account funds development work where the requirements definition indicates that a clear and rapid progression to KDP-4 approval is expected. Typically, this work would include concept analysis, demonstration of alternatives, full-scale development of selected alternatives, and/or limited production.

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(2) Procurement and Modernization of Air Traffic Control Facilities and Equipment (Activity 2, P&M/ATC).

Capital procurement that provides products for or in direct support of ATC facilities, flight service facilities, as well as other navigation and landing aids (i.e., centers, towers, stations, surveillance, navigation and landing aid facilities and equipment). Projects funded in this activity will have procurement maturity and usually include items for which all development work has been completed or include non-development items such as commercial off-the-shelf equipment. Projects included must be approved for full-scale production before or within the budget year and by which also will have approval at KDP-4 before or within the budget year.

Examples of projects funded in this activity include:

- (a) Long Range Radar
- (b) Terminal Doppler Weather Radar
- (c) Flight Service Facilities Improvements
- (d) Direct support projects, such as:
 - 1 Fuel Storage Tank Replacement/Monitoring
 - 2 Land/Easement Purchases for Existing Airway facility
 - 3 Flight Inspection Aircraft

(3) Procurement and Modernization of Non-Air Traffic Control Facilities and Equipment (P&M/Non-ATC).

Capital procurement that provides hardware, software, and construction improvements required for NAS facilities and equipment support. This activity includes projects for which the end products are not directly related to or attributable to other F&E projects required by or for air traffic control facilities or navigation and landing aid facilities. Projects in this activity represent the FAA's assessment of the various hardware, software, and construction improvements required for NAS supportability. Projects in this activity will have procurement maturity and usually include items for which all development work has been completed or include non-development items such as commercial off-the-shelf equipment. Projects included must be approved for full-scale production before or within the budget year and by which also will have approval at KDP-4 before or within the budget year.

Examples of projects funded in this activity include:

- (a) Automated Data Processing Facilities Management better known as "CORN." F&E funds applications conversion and process transition. After full implementation, the service contract will be funded by charge-back to the account that funds the work requirement that utilizes CORN.

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(b) NAS Management Automation Program

(c) Aviation Safety Analysis System

(d) Day Care Facilities for Children of Employees. When in compliance with P.L. 99-591 and required GSA and budget documentation has been approved, day care facilities space for children of FAA employees may be funded by FAA. The F&E account funds construction of required day care facilities at operating and support facilities where FAA has ownership or long term control of the parent facility. Funding may be accomplished through this activity for existing operating facilities, and funding for day care facilities for new facility projects (e.g., SCT) is to be included in the new facility project estimate. Day care space associated with non-operating facilities, such as Washington and regional headquarters, is to be provided within the lease, and, as may be appropriate, funded in the DOT Consolidated GSA Rent Account or in the Operations account.

(e) Also funded in this activity are "Training Equipment and Facilities." Included are such items as: Equipment and software for simulation based development and proficiency training at ARTCC's and ATCT's; equipment and courseware for computer based instruction technical training; planning and construction of training complexes and related infrastructure at the Aeronautical Center to replace obsolete facilities and to accommodate new equipment and systems coming into the NAS.

(4) Facilities and Equipment Mission Support. (F&E/MS).

Provides direct systemwide contractual support for implementing capital procurement programs. Includes projects that provide systemwide integration, transition engineering, and technical contractual support (activity is generally for support contracts and is by nature non-equipment, non-construction, and non-federal personnel) for implementation of specific projects contained in F&E activities 1, 2, and 3 and provide for a mission support capability on a systemwide basis.

Examples of projects funded in this activity include:

- (a) System engineering, integration, and support
- (b) National airspace integrated logistics supports
- (c) Logistic support services
- (d) Technical services support
- (e) Transition engineering support

(5) Personnel and Related Expenses (PCB&T).

Provides for the direct federal salaries, benefits, and related personnel costs of FAA employees implementing capital procurement projects funded in activities 1 through 4 of the F&E account.

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The following categories of costs are included:

(a) Funds all direct and related costs of Personnel Compensation, Benefits and Travel (PCB&T) to support the F&E work force in establishment, test and evaluation, installation, and repair/rehabilitation of facilities and equipment for redeployment within the NAS and the accomplishment of airborne certification of facilities and equipment. Note: Repair/Rehab involves equipment which can be economically rehabilitated and returned to the field for use and applies to major equipment and systemwide deployment (e.g., refitting of ASR-7/8 for redeployment).

(b) Funds direct and related costs of PCB&T to support F&E quality control specialists and certain contract specialists in Washington headquarters. Quality control specialists review and monitor contractor performance and provide inspection of plants, equipment, materials, and services. Contract specialists are responsible for the solicitation, negotiation, award, and administration of the FAA headquarters contracts for investment projects.

(c) Funds direct and related costs of PCB&T to support Washington headquarters project and program management, project implementation planning, and directly related support functions.

(d) Also funded in F&E are costs of personnel authorized in the Operations account who are performing on a limited basis in a cross-utilization status and are performing direct work on F&E projects. Work accomplished by this means is usually for economic reasons where time and travel cost savings may be achieved. In this case, cost would be initially recorded against the account paying the employee (e.g., Operations) and then adjusted by transfer of the cost to the F&E account (Activity 5). Costs funded in this manner include: Salaries (including required back-up overtime), benefits, and related travel. See FAA Order 1380.26A, "Cross Utilization of Regional F&E and Operations Funded Manpower" for additional information on this policy.

10. FUNDING DETERMINATIONS FOR SELECTED ITEMS IN OPERATIONS, F&E, AND R.E&D ACCOUNTS.

Since classes and purposes of costs are sometimes similar in all three accounts, the following specific guidance is provided for selected cost items:

a. Personnel Compensation and Benefits (PC&B). Salaries and benefits are budgeted for and paid from the account where the positions are authorized. By exception, there are certain personnel (e.g., Operations personnel performing direct work on F&E projects, including backup overtime and F&E personnel performing direct work to satisfy Operations requirements) that are to be funded by the benefiting account. In both cases, performance would be on a limited basis. In either case, cost would be initially charged to the account paying the employee and then adjusted by transfer of the cost to the benefiting account.

b. Permanent Change-of-Station (PCS) Moves. PCS costs are to be budgeted for and paid from the receiving account in which the transferee's salary is to be paid. By exception, F&E will pay for PCS moves for major establishment or consolidation efforts (i.e., New Denver Airport, Southern California TRACON, and Flight Service Station Consolidations) regardless of where the transferring employee's salary is to be funded. However, such PCS moves must be specifically planned and budgeted (or approved by reprogramming) for funding in the F&E account.

c. Travel. All travel costs (including administrative, training, conference, management review, job performance travel) are to be paid from the account where the traveler's salary is funded, with the following exceptions:

(1) Travel costs for Operations personnel required to do job performance travel in conjunction with work on specific F&E projects (typically performing new equipment installation) and specific project management and review are to be funded from the F&E account (Activity 5 only.) With regard to project management and review, an example would be a manager or technician attending a meeting to discuss commissioning and/or who is involved in preinstallation meetings, progress meetings, flight check, optimization, installation progress meetings, and project problem resolution.

(2) Travel costs for F&E personnel required to travel to satisfy Operations requirements (typically performing equipment maintenance work) are to be funded from the Operations account.

(3) In the event of R,E&D involvement, charges and transfers for performing and benefiting accounts as described above for F&E and Operations also apply for R,E&D.

d. Training Equipment, Course Development and Related Course Materials, and Contractor Provided Instruction. Training costs are to be funded by the appropriation from which the trainee's salary is paid, with the following exceptions:

(1) The F&E account is to fund the cost of training equipment for new equipment under procurement in F&E. Costs will be funded in the project estimate.

(2) All costs for course development work and course materials required for new equipment training are to be funded by the F&E account in the project estimate.

(3) The F&E account will fund initial contractor provided instruction to support new systems/equipment in the NAS. Based on the training policy and on in-house economies that may be achieved, courses should be considered for integration into the FAA Academy curriculum as soon as practical. When courses are established at the FAA Academy, whether contractor or FAA staff provided, cost of instruction will be funded by the Operations account. All recurrent training will be funded in the Operations account. (NOTE: In accordance with paragraph 10.c., of this order, travel cost associated with new equipment training is to be paid from the account where the trainee's salary is funded.)

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e. Leases. By practice, various forms of lease agreements to procure leased services, lands, structures, or equipment (including aircraft) are funded to some degree in all of the accounts covered by this order. In the interest of efficient resource allocation through well informed decisionmaking, decisions to lease or to purchase should always be supported by appropriate lease-purchase analyses, and development of those analyses should be a routine part of acquisition planning. When analyses support the lease option, the following standards and exceptions are to be applied.

(1) As a standard, the Operations account is to fund:

(a) All operating (including leased services) or capital leases (including lease-purchase) for all administrative uses and all support purposes that are not directly required as services, equipment, or facilities that are used to provide air traffic control services or navigation/landing aids. Also see paragraph 8.b(2) for related discussion.

(b) All leased telecommunications costs except those to be F&E funded as provided for in subparagraph 10.k. of this order.

(2) As a standard, the F&E account is to fund:

(a) The long-term capital leases at the Aeronautical Center and the Technical Center.

(b) Capital leases (including leases to purchase) or operating leases (including asset costs in leased services agreements) that are for services, equipment, or facilities that are used to provide air traffic control services or navigation/landing aids or to provide direct support to such services or aids.

(3) In leased service contracts used to provide air traffic control services or navigation/landing aids, estimates are to be distributed between asset (capital) costs and operational expenses and funded respectively in the F&E and Operations accounts.

f. Equipment Maintenance Contracts. Maintenance contracts are to be funded in the Operations account with the following exception. Maintenance contracts on new equipment procured by the F&E account may be funded in the F&E account for up to one full fiscal year following the year of commissioning, if required, to allow time to integrate the requirements into the Operations account. The transition of contract maintenance funding from F&E to Operations is to be accomplished on a facility-by-facility basis. Therefore, where the commissioning schedule is on a project/program basis and may be spread over a 2, 3, or 4 year period, the maintenance contract may require both F&E and Operations funding in the later years of the project implementation. The purpose of the facility phased transition is to allow the Operations appropriation (base) to build up in gradual or in small increments and not have a large increase in one year as would occur if transition from F&E to Operations did not take place until the last facility was commissioned.

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g. Facilities Maintenance and Repairs. All recurring maintenance costs for facilities and equipment are to be budgeted for and paid from the Operations account. These costs include special maintenance projects identified in the Operations budget as "Critical and Emergency Repairs to Structures and Grounds", e.g., structure painting, repairs to access roads and to fencing, replacement of carpeting, and repaving of parking lots. The following exceptions apply:

(1) Systemwide rehabilitation work for operating facilities and equipment is budgeted for and paid from the F&E account, e.g., replacement of equipment shelters, structural renovations, systemwide replacement of operating equipment, and service-life extension projects.

(2) Air Navigational Aids and Air Traffic Control Facilities (Local Projects) are not considered to be routine maintenance projects, but, instead, satisfy requirements unique to a particular region and provide a limited capability to modify, expand, and improve facilities and equipment. They are funded from the F&E account. Such improvements include: minor improvements to ATC work stations, antenna modifications and relocations, correction of fire hazard conditions, provisions for employee safety, projects to correct security problems in operating facilities, and correction of minor design deficiencies unique to an F&E equipment/site.

h. Spare Parts. Replenishment of spare parts, whether specific to particular equipment or generic, will be budgeted for and paid from the Operations account. Initial provisioning equivalent to the first year's supply of spares in support of equipment procured under the F&E account will be budgeted for and paid from F&E to allow for time to integrate the supply/support requirements into the Operations account. Extraordinary provisioning requirements (relative to design or performance deficiency in new NAS equipment or F&E funded systemwide equipment modifications on older equipment) will be paid from the F&E account.

i. Software Development and Maintenance. The Operations account will fund all routine software maintenance and revisions to operational systems. The F&E account will fund development and production of software for new systems related directly to new F&E projects and new software or major enhancements to current software that is to be hosted on existing equipment which was procured as an F&E project.

j. Emergency Restorations. When emergency restoration is required as a result of facilities damaged by unforeseen causes, regions may take immediate action to preserve system safety, life, and property, and to maintain critical services to the public. The immediate actions should be restricted to the minimum necessary to accomplish these objectives. Initial estimates and complete follow-up estimates should be completed as quickly as possible and furnished to the Office of Budget (ABU). In developing the estimates, attention should be given to the distribution of costs between the Operations account and the F&E account. The distribution should be in accordance with guidance contained in this funding criteria order.

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k. Leased Telecommunications. Costs of the Telecommunications Management and Operations program are to be funded in the Operations account. All leased operational and administrative telecommunications costs are to be funded in the Operations account, with the exception of:

(1) The F&E account is to fund non-recurring site preparation and facility-end connection costs associated with leased circuits that are required for the fielding of new F&E equipment. Funding is to be included in the relevant project cost estimates.

(2) F&E may fund recurring leased telecommunications costs for new F&E equipment coming into the system for up to one full fiscal year beyond the year of commissioning/operation. Funding is to be included in the relevant project cost estimates.

(3) The F&E budget item, "Critical Telecommunications Support," identified in the FY 1993 Congressional submission as Budget Item 2A20 provides for non-recurring costs associated with change-over of existing circuits. Costs for such tasks as: addition of transmission circuit drop-insert capability, capacity expansion, circuit cut-overs, terminal equipment rearrangements, switching system minor expansions, and FAA procured equipment for use with leased services are included. Costs for such tasks should continue to be included in this F&E budget item.

l. Technical Center Facilities. The Technical Center provides test and evaluation support to the R,E&D, F&E, and Operations funded activities. This support is budgeted on a shared basis, based on facility usage. These facilities and supporting functions will continue to be financed on a shared basis from the R,E&D, F&E, and Operations accounts.

11. RESEARCH, ENGINEERING, AND DEVELOPMENT ACCOUNT.

a. Appropriation Language. As defined in the appropriation language, the R,E&D account is: "For necessary expenses, not otherwise provided for, for research, engineering, and development, in accordance with the provisions of the Federal Aviation Act of 1958, as amended (49 U.S.C. App. 1301 et seq.), including construction of experimental facilities and acquisition of necessary sites by lease or grant, . . ." and for unique provisions as may be specified.

b. General Application. This account funds research, engineering, and development programs to improve the NAS by increasing its safety, security, productivity, capacity, and environmental compatibility to meet the expected air traffic demands of the future. The FAA has R&D programs that fall into the categories of "basic research," "applied research," and "development" as described in subparagraph 11.c. R&D programs are funded on a project basis. This account also funds direct federal salaries and benefits as well as related costs of FAA personnel implementing projects funded by the R,E&D account.

c. OMB Circular A-11 requires that an agency's total R&D budget be divided into the following funding categories: basic research, applied research, and development. Basic research is defined as "systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications toward processes or products in mind." Applied research is defined as "systematic study to gain knowledge or understanding necessary for determining the means by which a recognized and specific need may be met." Development is defined as "systematic use of the knowledge and understanding gained from research for the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes."

d. R,E&D Funding Schemes:

(1) R&D projects which are regulatory by nature (e.g., result in rulemaking or procedures) and/or have no equipment, facilities, or structures as end products to be funded in the production phase in the F&E account are to be funded in R,E&D. Such R&D projects generally involve "applied research" (see paragraph 11.c. for definition). Examples of research projects in this category are:

- (a) Crashworthiness
- (b) Aging Aircraft
- (c) Catastrophic Failure
- (d) System Security Integration (may involve "basic research")
- (e) Aircraft Hardening
- (f) Security Human Factors
- (g) Human Factors

(2) Research and development projects included in the "development" research category would constitute the greater part of the R,E&D budget in terms of costs. Work of this nature will generally lead to end products for which full-scale development and/or limited or full production will be funded in the F&E account. R&D work of this kind typically requires extensive effort in the requirements definition, concept analysis, and demonstration phases. Also, high technological risk or unquantifiable risks are characteristic of this work. R,E&D funded development projects migrate to the F&E account for funding of full-scale development or limited or full production at one of two different acquisition phases as described below:

(a) Programs initiated in the R,E&D account that will have F&E end products that have associated risks mitigated by the time KDP-3 approval is achieved will migrate to the F&E account. Typically, subsequent development work to be done in the F&E account will include full-scale development and could include limited production. Examples of R&D projects of this nature are:

- 1 Dynamic Ocean Track System
- 2 Automatic Dependent Surveillance
- 3 Terminal ATC Automation
- 4 Airport Surface Traffic Automation
- 5 Airport Movement Area Safety System
- 6 Aeronautical Data Link - Communications and Applications

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(b) In some instances where development is accomplished under the "build" concept, where within a segment of the project development all alternative design concepts are identified, explored, optimum alternative solution selected, demonstrated, tested, and accepted before going to the next build level, work may be retained in the R,E&D account through design integration--KDP-4 approval. A project under these conditions would then migrate to the F&E account for the production build (e.g., software development initiated in the R,E&D account).

12. OMB CIRCULAR A-109. In all accounts, acquisitions are to be in compliance with controls and guidance provided in OMB Circular A-109. In establishing federal policy for major system acquisitions (MSA's), OMB Circular A-109 defines a major system as a program that is critical to fulfilling an agency's mission, entails the allocation of relatively large resources, and warrants special management attention. While some projects in R,E&D and F&E are not considered MSA's, the approval steps described in A-109 for MSA's are to be applied to all R,E&D and F&E projects.

a. The A-109 major system acquisition process, as it is applied to FAA programs, is divided into five progressive phases: identification of mission needs, identification and exploration of alternative design concepts, demonstration of alternative design concepts, full-scale development, and limited production and full production. See Appendix I for the A-109 MSA Process Diagram.

b. After each of the first four phases cited above, the agency head is required to evaluate the cost, schedule, and performance of major projects and affirm the need for those projects. At each of these KDP's, the agency head is required to determine whether the project is ready to move to the next phase of the acquisition process.

(1) KDP-1 involves approving the mission needs statement and starts the major system acquisition process by granting authority to explore alternative system design concepts.

(2) Advancement to a competitive test/demonstration phase may be approved at KDP-2 if the agency's mission needs and program objectives are reaffirmed and the results of analysis of alternative design concepts can be shown to support selection of one or more of the alternatives for concept development and demonstration.

(3) Following reconfirmation of mission needs and program objectives, and verification that the chosen system concept design is sound and risks are acceptable, the agency head may authorize full scale development at KDP-3.

(4) After satisfactory test results and reconfirmation of mission needs and program objectives, the agency head may authorize full production at KDP-4.

Ruth A. Leverenz
Ruth A. Leverenz
Director of Budget

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Appendix 1**A-109 Major System Acquisition Process****Phase 1: Determine Mission Needs**

- Identify Mission Needs and Develop Mission Needs Statement
- Develop Program to Satisfy Needs

Key Decision Point 1

Approval of the mission needs statement starts the major system acquisition process by granting authority to explore alternative system design concepts.

Phase 2: Identify and Explore Alternative Design Concepts

- Identify Alternative Design Concepts
- Select Most Promising Design Concepts for Further Exploration

Key Decision Point 2

Advancement to a competitive test/demonstration phase may be approved when the agency's mission need and program objectives are reaffirmed and when alternative system design concepts are selected.

Phase 3: Demonstrate Alternative Design Concepts

- Design and Fabrication (normally involves a prototype)
- Test and Evaluation

Key Decision Point 3

Following reconfirmation of the mission need and program objectives and verification that the chosen system design concept(s) is sound and risks are acceptable, the agency head may authorize the next phase.

Phase 4: Full-Scale Development and Limited Production

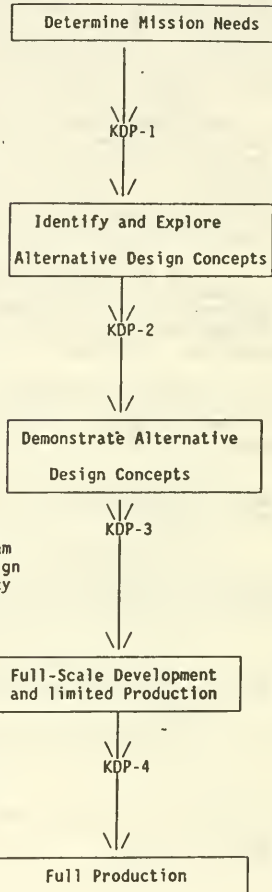
- Full-Scale Development
- Independent Tests of System Performance
- Demonstration in Expected Operational Environment

Key Decision Point 4

Following satisfactory test results and reconfirmation of mission need and program objectives, the agency head may authorize full production.

Phase 5: Full Production

- Full Production
- Deploy Systems for Operational Use



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F&A FUNDING MATRIX FOR READ AND F&E APPROPRIATIONS

FUNDING SCHEMES (For Reference in Paragraph and Circumstances)	ACQUISITION PHASES AND FUNDING SOURCES				
	REQUIREMENTS DEFINITION - A	CONCEPT ANALYSIS - B	DEMONSTRATION - C	FULL-SCALE DEVELOPMENT AND LIMITED PRODUCTION - D	PRODUCTION - E
I. 11.1(1) READ Initiated with no F&E End Product.	READ	READ	READ	READ	Not Applicable
II. 11.1(2)(a) READ Initiated where there are substantial risks in early acquisition cycle, but which are mitigated with NDP-3 approval.	READ	READ	READ	F&E	F&E
III. 11.1(2)(b) READ Initiated where "Build" Concepts employed with mitigation of funding to F&E at NDP-4.	READ	READ	READ	READ	F&E
IV. 9.0(1)(a) F&E projects initiated prior to FY 1993 that include on-going "development" work (Grandfathered)	F&E	F&E	F&E	F&E	F&E
V. 9.0(1)(c) New F&E projects that include development work where definition indicates clear and rapid progress to NDP-4 approval.	F&E	F&E	F&E	F&E	F&E
VI. 9.0(2-3) F&E production phase projects where development is completed or not required.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	F&E
KEY DECISION POINTS (NDP's):	• NDP-1: APPROVAL OF MISSION NEED • NDP-2: STATEMENT OF AUTHORITY GRANTED TO EXPLORE ALTERNATIVE SYSTEM DESIGN CONCEPTS • NDP-3: REAFFIRMED; ALTERNATIVE SYSTEM DESIGN CONCEPTS SELECTED • NDP-4: RECONFIRMATION OF MISSION NEED; VERIFICATION OF CHOSEN SYSTEM DESIGN CONCEPT(S) AND RISKS • NDP-5: CONFIRMATION OF MISSION NEED AND TEST RESULTS				
NOTES	A: CONDUCT THEORETICAL STUDIES/SCIENTIFIC EXPERIMENTS, BASIC APPLIED RESEARCH, AND ANALYSIS OF MISSION NEED. B: IDENTIFY ALTERNATIVE SYSTEM DESIGN CONCEPTS, CONCEPT ANALYSIS, FEASIBILITY DESIGN STUDIES, CONDUCT ENGINEERING STUDIES, RISK IDENTIFICATION C: DESIGN AND BUILD MODELS/ENGINEERING PROTOTYPES TO VERIFY FEASIBILITY OF SELECTED APPROACHES, BEST ALTERNATIVES SELECTION, DEVELOP FUNCTIONAL/PERFORMANCE/SYSTEM SPECIFICATIONS D: REFINED SELECTION APPROACHES, EVALUATE IMPACT ON HUMAN RESOURCES, DESIGN AND DEVELOP EQUIPMENT FOR TESTING, I.E., PREPRODUCTION PROTOTYPE, COMPLETE F&E E: PRODUCE OPERATIONAL EQUIPMENT, INSTALL/IMPLEMENT/COMMISSION OPERATIONAL EQUIPMENT INTO NAS, IMPLEMENT LOGISTICS/MAINTENANCE PLAN, PRODUCT IMPROVEMENTS				

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Appendix III

Summary of Funding Standards and Exceptions for Selected Items of Cost

This appendix is intended as a quick reference to funding standards and exceptions on selected costs that are common to and may cut across all three accounts. See paragraphs 8, 9, 10, and 11 of this order for details on these items. The subparagraphs of paragraph 10 are outlined below:

Paragraph 10 Reference

	Standard	Exception
a.	PCB - Paid from account where position is authorized.	Operations pays for other account personnel performing direct work on Operations requirements. F&E pays for other account personnel performing direct work on F&E projects. R,E&D pays for other account personnel performing direct work on R,E&D projects.
b.	PCS - Paid from receiving account in which transferee's salary is to be paid.	F&E pays PCS for major establishment and consolidation efforts regardless of where transferee's salary is to be paid.
c.	Travel - Paid from account where salary is paid.	Same exception as for reference a.
d.	Training Equipment, Course Development, and Contractor Provided Instruction - Paid from account from which trainees' salaries are paid.	F&E pays for: (1) Equipment for new and recurrent training on F&E procured equipment. (2) Course development and course materials for new equipment. (3) Initial contractor provided instruction on new equipment until moved in-house.

Paragraph 10
Reference

Standard

Exception

e.	Leases - Paid from all accounts.	Operation Pays for: (1) All leases for administrative and non-ATC or navigation/landing aids purposes. (2) Leased telecommunications costs except as provided under F&E in subparagraph 10.k. F&E pays for: (1) Long term capital leases at AAC and ACT. (2) Leases (including asset costs in leased services agreements) that are for ATC or navigation/landing aids purposes.
f.	Equipment Maintenance Contracts - Paid from the Operations account.	F&E pays for contract cost through first full fiscal year--then Operations funds.
g.	Facilities Maintenance and Repair - Paid from Operations account, including special maintenance projects.	F&E pays for: (1) Systemwide rehabilitation work for operating facilities and equipment. See F&E Budget Item "FAA Buildings and Equipment." (2) Minor improvements and modifications covered in F&E Budget as "Local Projects."
h.	Spare Parts - Paid from the Operations account.	F&E pays for: (1) Initial provisioning for new F&E equipment. (2) Extraordinary provisioning requirements relative to design or performance deficiency in new NAS equipment. (3) Provisioning required by systemwide equipment modifications on older F&E procured (existing) equipment.

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Appendix IIIParagraph 10
Reference

Standard

Exception

- | | | |
|----|---|---|
| i. | Software Development and Maintenance - Paid from the the Operations account for routine maintenance and revisions to operational systems. | F&E pays for:
(1) Development and production of software for new systems related to new F&E projects.
(2) New software or major enhancements to current software that is to be hosted on existing F&E equipment. |
| j. | Emergency Restoration - Paid from Operations or F&E based on guidance in this order. | (1) Operations pays for Operations salaries and expenses, including overtime, and for travel and support.

(2) F&E pays for equipment, construction, and installation costs to repair or replace damaged operating equipment and facilities. |
| k. | Leased Telecommunications - Paid from Operations account. | F&E pays for:
(1) Non-recurring site preparation and facility-end connection costs for leased circuits required for fielding new F&E equipment.
(2) Recurring leased telecommunications cost for new F&E equipment for up to one full fiscal year beyond commissioning/operation.
(3) Non-recurring costs for change over of existing circuits. See F&E budget item "Critical Telecommunications Support." |
| l. | Technical Center Facilities - Paid on a shared basis from all accounts. | Operations, F&E, and R,E&D pay costs on a shared facility usage basis. |

RE&D ADVISORY COMMITTEE REPORT

Mr. CARR. What did it cost the FAA to publish and distribute the November 25, 1991 report of the R, E&D Advisory Committee and the update to that report dated January 21, 1993? How many copies of those reports were published?

[The information follows:]

The cost of printing the initial 500 copies of the November 25, 1991 report was \$7,325. The initial distribution was primarily made to Congress, DOT, OMB, internal FAA, other government agencies, the press and a small number to handle requests from the general public. A reprint of 1,000 copies at a cost of \$5,896 was made for distribution at the ATCA Conference on FAA's FY 1992 budget. 1,000 copies of the January 21, 1993 update were printed at a cost of \$6,092.

AUDIT OF MITRE'S INDIRECT COSTS

Mr. CARR. A July 1992 report of the Senate Committee on Government Affairs raised a number of concerns regarding the management of our nation's federally funded R&D centers (FFRDCs). They noted that audits of indirect costs were often missing or untimely. How frequently has the FAA audited the indirect costs of MITRE?

[The information follows:]

The FAA utilizes the services of the Defense Contract Audit Agency (DCAA) to review and approve annual indirect rates in compliance with FAR 52.215-2, "Audit-Negotiation", as required by the FFRDC contract. The FAA contemplates no deviations from required indirect cost standards.

In addition, the FFRDC contract contains a specific clause directing the contractor to annually submit its proposed indirect rates, with supporting data, in accordance with FAR 52.216-7, "Allowable Cost and Payment". Submission of the required data by the contractor has been timely, however, final approval of indirect rates has been impacted by DCAA's workload. Currently, final approval has been received for FY 1988; FY 1989 and later are being negotiated.

MITRE MANAGEMENT FEE

Mr. CARR. Does the FAA pay MITRE a management fee? If so, what is that fee, how is it determined, and has it gone up since 1990?

[The information follows:]

The FAA FFRDC contract is a cost plus-fixed-fee type contract with a not-for-profit corporation. No provision for management fees exists under the Memorandum of Agreement (MOA) that established the FFRDC in September 1990. There are no plans to authorize management fees in any renewal to the MOA.

MITRE

Mr. CARR. Regarding the FAA's relationship with MITRE, this report said: "FAA awarded the operating contract to MITRE Corporation based on a sole source basis, apparently based on research MITRE had been performing for FAA for years under other contracts * * * FAA's conduct raises two questions: why MITRE needed an FFRDC designation if it was already providing the needed research, and why FAA declined the opportunity to examine other firms and bargain over the contract price". Would you comment?

[The information follows:]

The FAA recognized a long-term need for dedicated, professional technical/engineering support. The creation of the FFRDC meets this requirement. Federal Acqui-

sition Regulation (FAR) 35.017 provides the Government with a mechanism that ensures the availability of highly qualified experts. This mechanism provides a long-term relationship and a commitment to develop extensive technical skills. The FFRDC encompasses more than the usual contractual arrangement with the sponsor. The uniqueness of the FFRDC relationship is exemplified by the existence of non-FAA work outside the FAA's FFRDC contract.

The FAA complied with 41 U.S.C. 253(c)(1) and FAR 6.302-1, "Only One Responsible Source and No Other Supplies or Services Will Satisfy Agency Requirements", prior to awarding a sole-source contract with the contractor, and FAR 6.302-3, "Industrial Mobilization; or Engineering, Developmental, or Research Capability", in establishing the FFRDC.

The initial contract was awarded in November 1988 for Fiscal Years 1989 through 1993. Prior to the award, a Justification for Other Than Full and Open Competition for Engineering and Technical Support was certified by the contracting officer. This action was based on the FAA announcing its intention to acquire technical and engineering support in the Commerce Business Daily. A Statement of Capabilities was requested covering ten major technical experience areas. Twenty-two (22) respondents submitted statements which were assessed for a clear capability to perform the proposed tasks.

After considering all of the responses, MITRE Corporation was determined to be the only responsible source that could provide all the requisite services under the contract because of its thorough understanding of system engineering and design tradeoffs, and specialized experience in aviation technology extending over a period of 28 years.

That determination was validated prior to establishing the FFRDC in September 1990. As required by the FAR, announcements were published in the Commerce Business Daily and the Federal Register, inviting comments on the FAA's intention to establish a FFRDC with MITRE. None of those responding offered convincing evidence that private industry capabilities had significantly changed since the 1988 market survey, which would cause the FAA to reconsider plans for establishing the FFRDC.

MITRE'S COMBINED FINANCIAL STATEMENT

Mr. CARR. They also were concerned that MITRE operates two separate FFRDCs at the same site, one for DOD and one for the FAA, and submits combined financial statements and indirect cost data to both agencies. Under this arrangement, how does the FAA guarantee that they have adequate visibility into the true allocation of MITRE's costs at this location?

[The information follows:]

The FAA is requiring the contractor to implement a separate accounting system for the FAA's FFRDC. Formerly, accounting and financial reporting functions were performed centrally at the contractor's corporate level. Establishment of a separate accounting system for the FAA's FFRDC within the base period of the contract is a requirement of the current FFRDC contract. Currently, this is projected to be operational commencing with Fiscal Year 1994.

The FAA's FFRDC contractor is required to comply with the Cost Accounting Standards, rules and regulations issued by Cost Accounting Standard Board (CASB). The current contract incorporates FAR 52.230-2, "Cost Accounting Standards", FAR 52.230-5, "Administration of Cost Accounting Standards", and FAR 52.230-3, "Disclosure and Consistency of Cost Accounting Practices". No deviations or waivers of federal cost accounting standards are authorized under this contract. In addition, the FFRDC contract contains a specific clause directing the contractor to annually submit its proposed indirect rates, with supporting data, in accordance with FAR 52.216-7, "Allowable Cost and Payment".

As a minimum, a yearly audit is performed by DCAA to review the indirect rates under the FAA's contract. DCAA reviews and approves separate overhead rates for each cost center operated by MITRE.

SCOPE AND OBJECTIVES OF SIMMOD

Mr. CARR. Please provide a discussion of the scope and objectives of the SIMMOD program and a schedule and cost estimate for the program.

[The information follows:]

The objective of the SIMMOD program is to develop a computer simulation tool to solve complex airport and airspace design problems that would otherwise be intractable. Simulations can be played out in the computer for realistic evaluations of design, procedures, new technology, schedules and the effectiveness of proposed improvements.

The program scope is to provide a standard computer tool which can be used by the FAA to plan and conduct efficient operations, by airport planners to design better airports and more effectively use Grants-in-Aid money, and by airlines to develop more efficient and profitable operations.

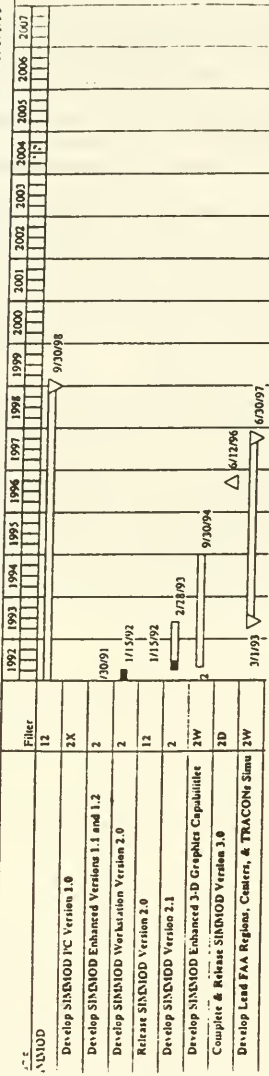
Recent examples of benefits derived from SIMMOD illustrate the model's utility: The FAA's System Capacity Office used SIMMOD to evaluate extensive airspace modifications in the New York Terminal Area. They identified proposed changes that will result in delay savings of 7.5 million dollars per annum. A U.S. carrier used SIMMOD to model a Far-East airport and immediately convinced the airport authority that alternatives to proposed airport operational changes would result in smoother traffic flow and less delay. This carrier estimates that the cost saving for all U.S. carriers at the airport exceeds 2 million dollars per year.

After several years of development, two years ago SIMMOD entered a new phase of wide spread implementation. Hundreds of users in the private and public sector are realizing immense benefits. As SIMMOD use has increased, many new user needs, functions, and applications have begun surfacing. An example is the new FAA deicing regulation. The FAA, airlines, and airport planners were able to develop and test plans for efficient operations in compliance with the regulation. Thus today's funding is targeted to producing big returns in response to pressing user needs. Through public-private sector and international cooperation, Federal funding complements an increasing level of funding from other sources. The program includes R, E&D funds of \$1.4 million appropriated in FY 1993, \$1.04 million requested in FY 1994, and plans to request \$1.0 million in FY 1995, and \$0.8 million in FY 1996. The schedule for the project is attached.

Air Traffic Models & Evaluation Tools

Level 2 Schedule

Print Date: 3/1/93



Project Manager:
Steve Bradford 302-287-4519
BY Calendar

Scheduled Milestone
Completed Milestone
Scheduled Activity

Progress
Summary

File Codes: 1 = Level 1; 2 = Level 2; A = ARD Project Tracking (A or 2); D = APM-200 Budget Submittal

NEW RUNWAY FOR PHILADELPHIA AIRPORT

Mr. FOGLIETTA. Mr. DelBalzo, I have a question regarding the Airport Improvement discretionary grant program (AIP). The City of Philadelphia is planning to construct a new commuter runway at Philadelphia International Airport. The runway will increase capacity at the Airport by more than 40 percent. Further, it would reduce the significant delays we experience at Philadelphia. And it would alleviate congestion along the Northeast corridor. This project will cost about \$215 million.

Under the AIP program, the FAA may issue Letters of Intent (LOI) to provide multi-year grants for large airport projects. Philadelphia plans to seek a Letter of Intent (LOI) for \$120 million in AIP funds over the next four years. I have heard projections that LOI's approved in prior years may absorb all of the LOI funding for fiscal year 1994 and fiscal year 1995. This could preclude projects like Philadelphia's from receiving funding.

Will the LOI crunch mean the postponement of important airport expansion projects like the new runway in Philadelphia?

[The information follows:]

LOI commitments are having a significant impact on AIP discretionary funds in 1993. LOIs have been issued in the past under the assumption that the AIP would continue to grow along with an associated increase in discretionary dollars for LOIs. This has not happened to the extent needed to offset the increasing needs for LOIs. Consequently, good candidates for LOIs may be delayed, or if approved, may contain a payment schedule which defers payments to future years.

CLOSING REMARKS

Mr. CARR. Well, we have had an exceptionally long hearing. You have been great in your patience and your diligence to the concerns of the Committee. I might just give anyone who is interested, and if something in the hearing has jogged something they want to unburden themselves with or put on the record as a final close, something that you feel you need to say and we just were not smart enough to ask the right question, if there are any comments in that category—

Mr. DEL BALZO. One comment I would make just on reaction-based on a reaction to the two days we have spent together, and it is a thought that has not occurred to me before. But I would hope that we could find the opportunity to have these kinds of discussions with the Committee more than once a year, more than just at appropriation time.

I believe that we probably learned more from you and your colleagues than you did from us. So I think we all benefit. The more time we can spend together, the better off we will be.

Mr. CARR. Well, we will do that. This Committee is going to become a good deal more active than it has been in the past. We are having hearings, as we have in the past, but we are also having hearings that are directed toward educating the members of this Committee and staff about selected subject matter areas.

We are not confining ourselves any longer to just the hearings on the budget request. We just need to be a lot smarter if we are going to be able to do our job for the taxpayers as best we can do it.

We have also expanded our meetings to include just occasional get-togethers with people who have thought a lot about transporta-

tion problems, who can educate us about what they know and we don't know. And we do these on an occasional basis. We are going to be taking more site visits, once our normal appropriations cycle is over, and we look forward to having a year-long relationship with the excellent staff at the FAA.

With that, if no one has a comment that they would like to make for the record, we will declare this hearing adjourned.

MONDAY, APRIL 19, 1993.

THE ADVANCED AUTOMATION SYSTEM

FIRST PANEL OF WITNESSES

KENNETH M. MEAD, DIRECTOR, TRANSPORTATION ISSUES, U.S. GENERAL ACCOUNTING OFFICE

ALLEN LI, ASSOCIATE DIRECTOR, TRANSPORTATION, U.S. GENERAL ACCOUNTING OFFICE

RICHARD R. JOHN, DIRECTOR, VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER, CAMBRIDGE, MASSACHUSETTS

OPENING REMARKS

Mr. CARR. Today we will receive testimony on the status of the FAA's Advanced Automation System. This program is often spoken of as the heart of the FAA's modernization effort and it involves the development of new computer communication systems for FAA air traffic control facilities.

The fiscal year 1994 budget includes \$455.7 million for AAS and is far and away the highest amount for any single capital program in the FAA. Total costs are now estimated at over \$5 billion.

The program has had a dismal history. It has become a spring ritual around here to hear of new delays and cost overruns of the AAS program. The program was originally expected to cost about \$2.5 billion; and, of course, we are over that by 100 percent. There is some risk, we hope not much, that the costs will even go higher, and that is because the overall system still hasn't been totally developed.

We have also had a problem with schedule slippages. In 1982, the FAA estimated AAS would be deployed somewhere around the beginning of 1990 and completed in 1991. Now the first installation is scheduled for 1996, with full implementation past the turn of the century.

We would like to be able to hear that, despite all these problems, the program is now on track with minimal future risk. However, we have a feeling that maybe the program still isn't totally stable yet and that future risks are unknown.

Because of the high cost of this program and the frustration with continuing delays and overruns, the Subcommittee wanted to call this hearing to get a better understanding of where the AAS program is today, what risks lie ahead and to weigh its true benefits against its costs. We simply cannot continue to fund a program if its management, schedule and cost performance continue to be as poor as it has been in the past and the program benefits continue to be so ill-defined and poorly measured.

We wanted to have this hearing today largely to obviate the need for delving in great detail in the AAS when FAA's normal budget

hearing will be in front of us. Otherwise, we would end up, I am sure, taking even more time. The members of the committee have been advised of this hearing, of course, and I think that helps us when the normal hearings come forward to reduce as many questions as might otherwise be the case.

We are pleased today to have with us representatives of the Volpe National Transportation Systems Center and the General Accounting Office. The Volpe Center conducted an important study for this committee last year on the status of software development in AAS, and they have recently completed a benefit cost study on the program again at our request. The GAO has been overseeing the AAS program since at least 1985 and is currently conducting a review of the program at our request.

We are pleased to welcome Dick John, the Director of the Volpe Center, and Ken Mead and Allen Li from the GAO to discuss the findings of their work.

We will hear later from the Acting FAA Administrator and the chairman and CEO of IBM's Federal Systems Company.

Mr. Mead and Mr. John, would you commence your statement? We will put your prepared statements in the record in full and ask that you summarize as is our custom.

STATEMENT OF KENNETH MEAD

Mr. MEAD. Thank you, Mr. Chairman.

I would like to—I appreciate being here. Mr. Li, who is at the table with me, recently rejoined our transportation team after being appointed the Associate Director. He has been following AAS for, gee, almost since its inception.

Before covering our key points, I would like to provide some background on the structure of AAS. I would like to do that fairly quickly but to do it because you can't understand the basic points without basically understanding the structure of AAS.

AAS is divided into, basically, five segments. The first one is the least complex and it is least costly and it is known as PAMRI. It replaces communications equipment that connect the enroute centers with things like radars. Enroute centers, and there are 22 of them, control the aircraft enroute between the airports. PAMRI is operational at all of them.

The second segment is known as the ISSS. ISSS will be installed in all enroute centers and, of course, will provide state-of-the-art color displays, new consoles and software and communications networks. ISSS is rather critical because the hardware and software being developed for ISSS are going to be used for the later segments. Thus far, most work by FAA and IBM has been on the ISSS segment of the project by far.

The third segment is the terminal Advanced Automation System. A terminal is, of course—they separate the aircraft within 20 or 30 miles of an airport. There are about 230 facilities in the country that perform that function. This segment is designed to replace the existing terminal systems, and, as indicated just a moment ago, it will use ISSS hardware elements and software.

The fourth segment is the Tower Control Computer Complex, towers handling aircraft in the immediate vicinity of the airport.

The fifth and final segment is called the Area Control Computer Complex, and it is designed to replace computers at the enroute centers in order to consolidate enroute and terminal systems. Most importantly from an airline point of view, this segment is also expected to be a platform for an advanced air traffic control function that would allow airlines to fly more fuel efficient routes. It was this one phase and feature of AAS from which most benefits to the industry were supposed to flow.

So it is against that backdrop that I would like to make four major points.

Our first is, as you pointed out, the AAS schedule delays and cost growth have worsened over the past year. In March, FAA and IBM acknowledged about a 14-month delay to ISSS, so we are now about three years behind the milestone set in the 1988 contract. You are looking at an October, 1996, date at the earliest for the first site which will be in Seattle where ISSS will be in operation.

Terminal modernization has also been affected by the ISSS delays. It is now about two years behind the 1988 contract schedule.

The other segments of AAS are in the early stages of development. Their completion dates are uncertain. FAA's official estimate for this project is \$5.1 billion. I think that estimate is very soft.

In addition, the delays have and will continue to force FAA to initiate costly interim projects in order to sustain the current air traffic control system. To date, those projects have cost you about half a billion. I see at least another quarter billion coming down the pike.

Our second point is that several major factors have led to the schedule delays and cost growth. One reason was that FAA and IBM agreed to an AAS plan that was too ambitious from the start. Both greatly underestimated the technical challenge required. They set schedules that later proved to be unrealistic.

Another reason was that FAA did not provide needed oversight of IBM's performance in some important respects.

Let me give you one example. They didn't have good, quantitative information on the progress in the software development. Measuring software development in terms of software builds, those were the increments in which software is built and tested, didn't provide FAA with an adequate measure of progress. So FAA and IBM as recently as last summer said they were making good progress with ISSS because they were working on the last software build, but it turned out that much of the software code for some of the most difficult functions was still unwritten and untested.

Also, there have been some major requirements' issues that FAA has not effectively resolved like electronic flight strip definition, and controller screen display formats. New requirements kept being added and other requirements' issues were allowed to drag on unresolved. Somebody needed to make a decision about what the requirements for this ISSS would be.

Our third point is that FAA and IBM are acting on ISSS problems but technical challenges still lie ahead. FAA and IBM announced in March a series of management initiatives that are, in our view, quite reasonable under the present circumstances. They

essentially have top management much more involved than they did before, and they are establishing a structure for resolving requirements in a timely way.

IBM also took action to address the ISSS problems. You have the CEO of IBM's Federal systems company who has taken over the role of AAS program manager.

We are encouraged by the initiatives, but I think we need to recognize that it is going to take time for these initiatives to work.

Meanwhile, FAA and IBM must overcome a number of major technical challenges with ISSS software. They may be addressing these themselves later today, but one example is the AAS contract requires a simultaneous operation of 210 work stations. As of February, IBM had about 56 work stations operating together for short periods of time. I think today or late last week they were going to do a test with 26 operating for about six hours.

FAA has decided to defer production of ISSS until the software problems are worked through, and we endorse that decision.

Now, our fourth and final point is that FAA's funding needs and schedules for the last three segments of AAS are uncertain at this time, and that is because FAA intends to restructure the project. The restructuring, Mr. Chairman, is rather dramatic, and it is going to have three basic elements.

First, FAA now wants to scale back the facility consolidation strategy on which the AAS contract is based. FAA has known for at least five years that its plan to consolidate 230 facilities into 23 would not work, but it kept deferring that decision. Now, rather than 23 facilities, the new plan will call for about 200 facilities.

Second, rather than waiting for the final phase of AAS as originally planned, FAA wants to add the advanced software function earlier so as to permit more fuel-efficient routes below 39,000 feet.

Third, FAA now plans to change very significantly the design and quantities of equipment for the tower segment of AAS. This restructuring is likely to affect AAS project costs and schedules, user benefits, equipment location as well as FAA's contract with IBM. Our thoughts on this year's funding request are that it ought to be set at a level so as not to foreclose the choice of options that FAA has available to it.

Allen, do you have a couple words?

STATEMENT OF ALLEN LI

Mr. Li. Yes, I would like to just highlight and emphasize some of the things that we are saying this year.

As Ken indicated earlier, the expectations were extremely high when AAS was announced. Now, after numerous delays, cost increases and uncertainty regarding future AAS segments, FAA appears to be at a critical juncture in its modernization effort.

The bottom line is that I believe FAA is implementing reasonable management initiatives regarding ISSS. FAA and IBM should be given the time to make these changes work so that confidence can be renewed in their ability to implement ISSS. Of course, for the ISSS to be successful, FAA and IBM must still address some key technical challenges and maintain their eye on the success of the management improvements.

But the story on the follow-on AAS segments is different. Here, unraveling the uncertainty, especially about consolidation, will have a domino effect on what FAA will do with its TRACONS, towers and how much smaller ACCC must be downsized to reflect the new realities of limited consolidation. I am mindful that airlines and other system users want the benefits that AAS promises, but the feasibility of earlier implementation of AERA using ISSS as a platform will require more analysis to make this new possibility a reality.

So for these reasons it would be prudent for FAA not to initiate any activities which might constrain its choice of options. For example, FAA needs to establish its new operational and performance requirements for its enroute centers before IBM starts to redesign ACCC in fiscal year 1994. Therefore, the priority now is for FAA to establish the most cost-effective AAS segment alternatives in response to its changing direction.

We believe that continued congressional support should hinge on FAA's successful demonstration that AAS technical challenges can be met and the quality of the agency's justification for restructuring and proceeding with AAS.

This completes GAO's statement. We will answer any questions following Dr. John's statement.

[The prepared statement of Mr. Mead follows:]

United States General Accounting Office

GAO

Testimony

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House of Representatives

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AIR TRAFFIC CONTROL

Uncertainties and Challenges Face FAA's Advanced Automation System

Statement of Kenneth M. Mead,
Director, Transportation Issues,
Resources, Community, and Economic
Development Division



Mr. Chairman and Members of the Subcommittee:

We are pleased to testify today on the Advanced Automation System (AAS)--the largest project in the Federal Aviation Administration's (FAA) \$33 billion program to modernize the nation's air traffic control system. Conceived in 1983, AAS was initially estimated to cost a total of \$2.5 billion. That total cost rose to \$4.8 billion when the contract was signed with International Business Machines (IBM) in 1988. Today, FAA's estimate stands at \$5.1 billion.

Structured in five individual segments, AAS is being developed and implemented over a 20-year period using a "building block" approach. Segments one and two of AAS replace equipment that helps controllers separate aircraft en route between airports. The project's third segment replaces equipment relied upon by controllers to separate aircraft within 20-30 miles of airports. The fourth segment controls aircraft on the ground and in the immediate vicinity of an airport. The fifth and final segment of AAS combines equipment from segments one, two, and three into a single consolidated facility and provides new software that will permit controllers to grant aircraft more fuel-efficient routes. Only the first segment--the least complex of all the segments--has been completed.

FAA has established high expectations for the AAS project. It would replace aging and maintenance-intensive air traffic control equipment with more reliable systems. It would also provide new capabilities to make controllers more productive and allow airlines to fly more fuel-efficient routes. The need for more fuel-efficient routes has been heightened by the airline industry's recent financial problems. However, after investing \$2.7 billion over a 10-year period, FAA estimates that it is at least 3-1/2 years from fielding any major AAS equipment.

In our testimony today, we will describe the latest schedule delays and cost growth for AAS, the causes of these problems, the actions taken to address problems with the second segment of AAS and the challenges that still lie ahead for that segment, and the need to restructure AAS. This statement is based upon past reports and our ongoing AAS review for this Subcommittee. (See app. II for a list of related GAO products.)

In summary, we found the following:

- AAS schedule delays and cost growth have worsened over the past year. In March 1993, FAA and IBM acknowledged an additional 14-month delay to the second AAS segment--the Initial Sector Suite System (ISSS). ISSS has been the major thrust of FAA's and IBM's work to date and has had a history of development problems. With the recent delay, ISSS is now about 3 years behind milestones established in the 1988 contract. The third segment of AAS--the Terminal Advanced Automation System (TAAS)--is now about 2 years behind the 1988 contract schedule. The final two segments of AAS--the Tower Control Computer Complex (TCCC) and Area Control Computer Complex (ACCC)--are in early stages of development. Their completion dates are uncertain. Although FAA's official estimate is \$5.1 billion for the entire AAS project, FAA officials acknowledged in March 1993 that this estimate may grow by at least \$235 million. In addition, delays in AAS have and will continue to force FAA to initiate costly interim projects to sustain the current air traffic control system. To date, these interim projects have cost about \$515 million, and FAA estimates that additional projects may cost another \$200 million.
- Several major factors have led to the schedule delays and cost growth. First, FAA and IBM agreed to an AAS plan that was too ambitious, and they significantly underestimated

the technical challenge required to develop it. As a result, FAA and IBM set schedules that proved unrealistic when IBM encountered technical difficulties. Second, FAA did not provide the needed oversight of IBM's performance. For example, FAA did not have good quantitative information on IBM's progress in software development. Third, FAA has not effectively resolved some major requirement issues for the second segment of AAS. For instance, in areas such as electronic flight strip definition and controller screen display formats, ISSS issues remain unresolved.

- To address recent problems with ISSS, FAA and IBM announced in March 1993 a series of management initiatives that, in our view, are reasonable under present circumstances. These initiatives include increasing FAA and IBM top management oversight and establishing a structure for resolving requirements in a timely manner. While we are encouraged by the changes, we recognize that it will take time for these management initiatives to work. Meanwhile, FAA and IBM must overcome a number of major technical challenges with ISSS software. For example, the AAS contract requires the simultaneous operation of 210 ISSS work stations. As of February 1993, IBM had only 56 work stations operating together for short periods of time. We support FAA's decision to defer production of ISSS hardware until technical challenges with ISSS software are overcome. We will continue to track the progress of ISSS.
- Funding needs to fully implement AAS are uncertain at this time. The uncertainty stems from FAA's intention to restructure the project. There are three reasons for the restructuring. First, FAA now wants to scale back the facility consolidation strategy on which the AAS contract is based. For example, many facilities that would have been consolidated will remain separate. Second, FAA also

wants to add advanced software functions, such as those that permit more fuel-efficient routes, to the second segment of AAS rather than waiting for the final segment as originally planned in 1988. Third, FAA now plans to change the design and quantities of equipment for the tower--TCCC--segment of AAS. We believe that restructuring is likely to affect AAS project costs and schedules, user benefits, equipment location, and FAA's contract with IBM. Consequently, it would be prudent to limit funding of FAA's effort this fiscal year to activities that would not constrain its choice of options. We believe that FAA's forthcoming justification for the restructuring of AAS would be most effective if it included--in quantitative terms--(1) the extent of problems with existing equipment and (2) the capabilities and user benefits that AAS segments and other automation efforts will offer over and above current equipment.

We would now like to discuss these four issues in more detail.

BACKGROUND

AAS will provide a new automation system that includes improved work stations for controllers, computer software, and processors. It is being developed to replace current equipment and to allow the air traffic control system to accommodate forecasted increases in traffic through the use of modern equipment and advanced software functions. AAS is a complex technological project containing several million lines of software code, an extensive computer-human interface, and stringent requirements for performance and reliability.

FAA's air traffic control mission is to promote the safe, orderly, and expeditious flow of aircraft. Air traffic controllers maintain separation between aircraft by utilizing information

processed by computers and displayed on video screens at controllers' work stations. FAA uses three types of facilities to control aircraft: airport towers, terminal facilities, and en route centers. Airport towers control aircraft on the ground and in the vicinity of the airport. Terminal facilities sequence and separate aircraft from the point at which tower control ends to about 20 to 30 miles from the airport. En route centers assume control of the aircraft and maintain control until the aircraft enters terminal airspace at its destination.

The project was originally designed in 1983 to accommodate the consolidation of 230 terminals and en route centers into 23 facilities. Today, FAA is considering a much less ambitious consolidation strategy that would result in about 200 terminal and en route facilities.

In 1983, the total cost estimate for AAS was projected to be \$2.5 billion and completion was scheduled for 1996. When the contract with IBM was signed in 1988, FAA estimated the project would cost \$4.8 billion and be completed in 1998. Since that time, the projected costs have increased to \$5.1 billion, and the estimated completion date has slipped to 2002.¹ Appendix I provides FAA's figures on how the actual and estimated appropriations for AAS are currently allocated. As indicated in appendix I, about 47 percent of the estimated funds for AAS, or \$2.4 billion, have not yet been appropriated.

For fiscal year 1994, FAA has requested about \$456 million in funding for AAS. This budget request includes money needed for technical support contractors, field implementation support, building modernization linked to the AAS project, and training.

¹These cost estimates include actual and anticipated appropriations for FAA's Research, Engineering, and Development account and its Facilities and Equipment account.

The bulk of the request--about \$350 million--is to fund the AAS prime contract with IBM.²

AAS Will Be Implemented In Five Segments

As currently defined in the contract, FAA and IBM will develop the system in five segments. The first segment is the least complex segment known as the Peripheral Adapter Module Replacement Item (PAMRI). It replaces existing communications equipment that connect en route centers with external systems, such as radars. PAMRI is currently operational at all 20 of the nation's continental en route centers.

The second segment of AAS is ISSS. ISSS will also be installed at all en route centers. It will replace mechanical flight strip printers,³ controller display screens, and associated display processing systems with state-of-the-art color displays called work stations, new software, and modern computer communications networks. ISSS will interface with the primary computer system used by en route centers, known as the Host computer. ISSS is a critical segment of AAS because hardware and software being developed for later segments will be based upon ISSS. Thus far, most work by FAA and IBM has been on the ISSS segment of the project.

²Requested contract funds include \$152 million for ISSS, \$89 million for TAAS, \$54 million for TCCC, \$27 million for ACCC, \$22 million for developing an advanced software function known as Automated En Route Air Traffic Control (AERA), and a \$6 million award fee.

³Flight strips provide controllers with basic air traffic information, such as aircraft routes, altitudes and air traffic clearances. A controller presently marks up the paper strips to record changes to information and to coordinate information with other controllers.

The third AAS segment is TAAS. It is designed to replace existing Automated Radar Terminal Systems (ARTS), which are the main computer systems used at terminal facilities for controlling approaching and departing aircraft. TAAS will also provide new controller work stations to replace existing radar screens. TAAS will incorporate hardware elements (including work stations), networks, and software already developed for ISSS.

The fourth segment of AAS is TCCC. At selected airport towers, TCCC will replace radar displays and paper flight strip systems with new work stations for tower controllers.

The fifth and final step in the evolution to full AAS is ACCC. It is designed to replace the PAMRI and the Host computers used at en route centers and to consolidate en route (ISSS) and terminal (TAAS) systems into what FAA calls area control facilities. ACCC is also expected to provide AERA. FAA expects AERA to allow controllers to grant more fuel-efficient routes which may also result in passenger time savings as well as reduced aircraft fuel consumption.

SCHEDULE DELAYS AND COST GROWTH HAVE WORSENE

Since its conception in 1983, the AAS project has experienced significant schedule delays and cost growth. The schedule delays became more pronounced in 1992. Schedule delays have led FAA to initiate costly interim projects.

Schedule Delays Have Continued

The AAS project continued to experience schedule delays in 1992. As a result, FAA and IBM agreed in March 1993 to an additional 14-month delay in the second segment of AAS. This brought the total delay in this segment to about 3 years beyond milestones set in the 1988 contract. In March 1993, FAA officials

also indicated that the third segment--TAAS--will be delayed an additional 7 months, for a total delay of about 2 years from the milestone set in the contract. TCCC and ACCC are in the early stages of development. Their completion dates are uncertain.

The Cost of AAS Has Grown

FAA's official March 1993 estimated total cost for AAS is \$5.1 billion, an increase of 6 percent since 1988. However, recent AAS problems have caused FAA to identify a potential \$235 million in additional project costs. These additional costs are mainly due to FAA and IBM underestimating the work needed to produce ISSS and TAAS. FAA officials told us they hope to offset the \$235 million cost increase with other actions. However, they did not provide us with any specifics as to how they will accomplish this.

FAA is also considering other changes to AAS which may alter the agency's total cost estimate for the project. For example, FAA plans to change the design and quantities of equipment for the tower (TCCC) segment. Also, likely changes to FAA's facility consolidation plan would require FAA to exercise some contract options not yet factored into its cost projections for AAS. FAA is unsure whether these changes will increase or decrease costs for AAS.

Delays In AAS Have Led to Costly Interim Projects

Because of delays in AAS, FAA has been forced over the years to start some costly interim projects to sustain and enhance current hardware and software. For example, FAA initiated a \$435 million Interim Support Plan in 1987 to bridge the gap between current and future automation systems at terminal facilities. In 1992, FAA began an \$80 million project to buy advanced versions of ARTS to install at some of its larger terminal facilities. Over the past few months, FAA also initiated additional plans for three

projects, costing over \$200 million, to sustain its en route centers until AAS can be installed. FAA has not included costs for these interim projects in the \$5.1 billion estimate for AAS even though AAS delays have caused the need for these projects.

SEVERAL MAJOR FACTORS HAVE LED TO CURRENT PROBLEMS

Several major factors have led to current problems with the AAS project. In 1988, FAA and IBM agreed to an AAS plan that was too ambitious and established schedules that proved to be unrealistic when IBM encountered technical difficulties. Also, FAA did not exercise adequate oversight of IBM's progress in software development. In addition, FAA has not been decisive in resolving basic requirements issues.

The Plan for AAS Was Overly Ambitious

In our opinion, one of the major causes of current AAS problems is that the initial plan was overly ambitious. In the early 1980s, FAA decided to replace the fundamental hardware and software in en route facilities, terminals, and airport towers with one large project to be implemented over a period of 13 years. This project was to have been incorporated within a consolidation plan that would have affected every en route and terminal facility in the country. However, later events show that both FAA and IBM underestimated the effort required to replace key hardware and software components throughout the air traffic control system.

As a result of their misjudgment of the effort required for AAS, FAA and IBM set schedules which could not be met after IBM encountered technical difficulties. The issue of unrealistic schedules was highlighted in an April 1992 report done at the request of the House Committee on Appropriations by the Volpe

National Transportation Systems Center.⁴ The Volpe report stated that overly aggressive schedules were overtaken by factors such as unresolved requirements and design and software rework.

FAA Did Not Provide Adequate Oversight

FAA did not assign sufficient staff or implement adequate quantitative measures for assessing the progress of IBM's software development efforts. This has prevented FAA from having necessary oversight of IBM's performance.

Concerned about FAA's oversight of IBM's software development efforts, the April 1992 Volpe report recommended that FAA increase the number of staff positions within the project office's software development branch from three to between six and eight people. FAA has subsequently added two staff members to this branch.

The Volpe report also noted that the official progress reports did not provide a realistic assessment of the amount of software development completed and remaining. For example, Volpe pointed out that measuring software development in terms of software builds--increments in which the software is built and tested--did not provide an adequate measure of progress. FAA and IBM indicated as recently as last summer they were making good progress with ISSS because they were working on the last software build. However, they did not acknowledge that much of the software code for the most difficult functions remained unwritten and untested. FAA still has a very limited capability for providing information on the real progress of software development. When we asked for such documentation in March 1993, an FAA project official stated that

⁴"An Assessment of the Status and Technical Risk of Federal Aviation Administration's Advanced Automation System Software Development" (IR-MA-1298-2), Volpe National Transportation Systems Center and Intermetrics, Inc., April 1992.

this information was not yet available, but the agency was trying to develop such performance measures.

FAA Has Not Effectively Resolved Some Major Requirements Issues

FAA has experienced difficulty in resolving requirements for ISSS, which has contributed to the problems experienced by the project. The Volpe report addressed the issue of unresolved requirements. The report said that, in areas such as electronic flight strip definition and controller screen display formats, the lack of resolution of requirements issues implied high schedule and technical risk for ISSS. According to IBM project officials, the lack of clarity and decisiveness by FAA in resolving requirements issues is an important contributing factor to the AAS schedule problems. The Volpe report recommended that FAA enhance the process for resolving ISSS requirements issues.

MANAGEMENT INITIATIVES ARE ENCOURAGING BUT ISSS TECHNICAL CHALLENGES REMAIN

FAA implemented in March of this year a series of management initiatives to address ISSS problems identified in 1992. These initiatives include increasing top-level attention to the project and establishing a structure for resolving requirement issues in a timely manner. It will take time for the initiatives to work. Meanwhile, FAA and IBM must overcome a number of technical challenges. Until ISSS is successfully tested, additional schedule delays and cost increases may occur.

Management Initiatives Implemented to Address ISSS Problems

In March 1993, FAA acknowledged that it had not been exercising sufficient, continuing top-level management focus on the project, including providing adequate attention to requirements

issues, and that it generally took too long to respond to technical issues.

To address these problems, FAA instituted three management-related initiatives. First, the agency elevated the AAS project by naming a program director to oversee AAS who now reports directly to the Administrator. The program director for AAS is the former program manager of AAS. However, he is now empowered to make decisions on issues affecting requirements, except where schedule or cost of the project will be affected by a requirements change. As a result, the program director is accountable for cost containment and keeping the project on schedule. The FAA's Acquisition Review Council, chaired by the Administrator, is responsible for reviewing the status of the AAS project at least every 2 weeks, and more often if necessary. The Council is also responsible for ruling on requirements changes that impact on ISSS cost or schedule.

Second, FAA is in the process of establishing separate program managers for each of the four remaining segments of the AAS project. The former deputy program manager for AAS has been selected as the ISSS program manager.

Third, FAA established a dedicated ISSS team on-site at IBM. The team includes representatives from Air Traffic and Airway Facilities organizations within FAA, as well as a contracting officer. The team is fully empowered to resolve technical problems as they arise, eliminating the decision-making delays of the past where it took too long for the agency to come to grips with such problems.

IBM also took action in March 1993 to address the ISSS problems. The Chief Executive Officer of IBM's Federal Systems Company assumed the role of AAS program manager. He became personally involved to ensure that AAS met its technical, schedule,

and cost milestones. IBM also focused its management attention on fixing the ISSS schedule problems, eliminated inefficiencies in its test organization, and limited software changes to those that are mandatory. Moreover, IBM integrated additional diagnostic and simulation tools with plans to continue expanding this capability.

These management initiatives implemented by FAA and IBM will take time to work. We believe that these initiatives are reasonable under present circumstances. They facilitate decision-making, but they will not necessarily resolve technical challenges.

Technical Challenges Lie Ahead for ISSS

FAA and IBM cannot be certain that ISSS is truly under control--and that schedule delays and cost increases will not recur--until all technical challenges are overcome and the system is fully tested. Two of the major technical challenges that IBM has experienced during ISSS development are discussed below.

- System stability. A senior AAS project official described stability of the system as the most important issue facing ISSS at this time. The AAS contract requires ISSS to sustain 210 work stations simultaneously while operating at peak load. IBM had only been able to reach a level in which 56 work stations operate together for short periods of time, as of February 1993.
- Reconstitution of the Host computer data base. Under ISSS, the Host computer will continue to supply flight data and other information to the ISSS work stations. These work stations will have their own processors which controllers will be able to use to store and update data. However, should the Host computer become inoperative and be unable to process and communicate data, the work station

processors will be able to operate independently. The problem occurs when the Host computer is reactivated because it will have a different set of flight data than will exist in the work station processors. Because of the inconsistencies in the databases of the Host and the work station processors, they will not be able to work together upon reactivation of the Host. At the March 10, 1993, House Subcommittee on Aviation hearing on AAS, IBM acknowledged that it did not know how to address this problem, but it is convinced that a solution will be found.

Development problems such as those cited above have prevented FAA and IBM from testing ISSS. As a result, no significant testing has been completed to date. According to an FAA official, FAA's acceptance of ISSS is currently planned for September 1994. Thereafter, ISSS will be subjected to one year of operational testing at FAA's test center, followed by an additional year of field testing before the system becomes operational. What such testing will find is unknown. However, as the FAA Acting Administrator pointed out at the March 10, 1993, hearing, operational testing of ISSS will highlight some aspects of the system that may need refining or changing before full-scale deployment can begin.

Knowing that technical challenges remain, FAA has deferred its production decision on ISSS hardware. We support this decision. Until ISSS software is successfully tested, FAA does not need to acquire large quantities of ISSS hardware.

FUNDING NEEDS FOR LATER SEGMENTS ARE UNCERTAIN

At this time, the total funding needs to fully implement AAS are uncertain because FAA intends to restructure the AAS project. We believe that the restructuring--which FAA has yet to announce--will have implications for project costs and schedules, user

benefits, equipment location, and FAA's contract with IBM. Consequently, it would be prudent to limit funding of FAA's effort this fiscal year to activities that would not constrain its choice of options.

FAA intends to restructure AAS for three reasons-- implementation of a new consolidation strategy, potential acceleration of the schedule for advanced software functions, and a reduction in the number of towers receiving TCCC equipment. First, full-scale consolidation of en route centers and terminals has been the foundation of the AAS contract. FAA planned to consolidate over 230 air traffic control facilities of varying sizes into 23 area control facilities. However, after extensive study, FAA concluded in March 1993 that a major shift in policy regarding consolidation of air traffic control facilities is warranted. Concerns over safety in the event of a catastrophic failure of an area control facility and analysis of other factors have convinced FAA that significantly less consolidation should be adopted. Therefore, FAA and the Department of Transportation recently recommended to the Office of Management and Budget that consolidation now consist of (1) keeping the 22 existing en route centers,⁵ (2) creating nine large terminal facilities, and (3) keeping about 170 unconsolidated terminal facilities. Limited consolidation would represent a change in several technical and cost assumptions upon which TAAS and ACCC were based. For example, FAA will install TAAS at only the nine large terminal facilities rather than in 23 area control facilities as originally contracted for with IBM. Moreover, FAA has yet to decide whether TAAS or some other automation system will be installed at the 170 non-consolidated terminals.

⁵This includes 20 en route centers in the continental United States and one facility each in Alaska and Hawaii.

Second, in recognition of the airline industry's recent financial problems, FAA is attempting to expedite the implementation of advanced software functions originally scheduled to be implemented with the final segment of AAS. Most importantly, FAA is exploring ways to add AERA--which could permit controllers to grant aircraft more fuel-efficient routes--to ISSS. This is a high-priority item for FAA because it offers significant benefits to the airline industry. If expediting AERA is technically feasible, this would be a positive step for helping the airline industry. However, we caution that this expedited version of AERA will not be available until at least late 1996 when ISSS is scheduled to be operational.

Third, under the terms of the 1988 AAS contract, 258 of the current 435 airport towers were designated to receive full TCCC. However, under FAA's limited consolidation proposal, FAA would install full TCCC at fewer sites. FAA would install full TCCC at 80 airport towers and a less capable TCCC at 105 towers. FAA has not determined what to do at the remaining 250 towers.

FAA's forthcoming justification for its restructuring of AAS would be most effective if it included two elements. One element is a description of the extent of problems with existing equipment. For example, FAA's original justification for AAS cited in 1981 that then-existing equipment would not be capable of handling air traffic beyond the late 1980s. However, FAA now estimates that existing equipment will be able to handle air traffic through the year 2000 and perhaps beyond given recent and planned enhancements to the systems. The second element is a description of the capabilities and user benefits that AAS and other automation enhancements will offer, in quantitative terms, over and above current equipment. In October 1992, we asked FAA for data on such capabilities. After 6 months, FAA provided mostly qualitative descriptions of the added capabilities. For example, FAA said ACCC and associated software would allow controllers to grant more

user-preferred routes but the agency did not identify how many more. Also, FAA said AAS would increase system reliability. However, the agency did not identify for us how much system reliability would be increased by AAS. Information on the condition of existing equipment and additional capabilities provided by AAS segments would help the Executive branch and Congress make decisions on the future of the project.

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In summary, we believe that recent management initiatives to address ISSS development problems are reasonable under current circumstances. However, it will take some time for these changes to work. For ISSS to be successful, FAA and IBM must address numerous technical challenges. However, we are still concerned about the uncertainty that surrounds the last three segments of AAS. Less consolidation, a desire to implement advanced software earlier, and less tower modernization will have implications for AAS project costs and schedules, user benefits, equipment location, and FAA's contract with IBM. We believe that continued support should hinge on FAA's successful demonstration that AAS technical challenges can be met and the quality of the agency's justification for restructuring and proceeding with AAS.

AAS ACTUAL AND PROJECTED APPROPRIATIONS
(Dollars in millions on a fiscal year basis as of 3/1/93)

ITEM	1982-88		1989-93		1994-completion		Total cost	
	RE&D	F&E	RE&D	F&E	RE&D	F&E	RE&D	F&E
1. Design competition phase	417	277					417	277
2. Acquisition phase:								
Prime Contract:								
PAMRI						10		10
ISSS						450		450
TAAS						460		460
TCCC						424		424
ACCC/AERA						244		244
Not segmented		60		1,229		232		1,520
Total prime		60		1,229		1,820		3,108
Tech. support		20		234		256		509
Implementation support		22		94		212		328
Training				7		60		67
En-route center modernization				348		66		414
FAA in-house				19				19
Subtotals	417	379	19	1,912	0	2,413	436	4,704
Total project		796		1,931		2,413		5,140

Notes: (1) Columns may not add due to rounding.

(2) Funding for AAS has been provided through both the Research, Engineering and Development (RE&D) and Facilities and Equipment (F&E) accounts.

Source: FAA's Advanced Automation Project Office

RELATED GAO PRODUCTS

Air Traffic Control: Advanced Automation System Problems Need to Be Addressed (GAO/T-RCED-93-15, Mar. 10, 1993).

Transportation Issues (GAO Transition Series) (GAO/OCG-93-14TR, Dec. 1992).

Air Traffic Control: Justifications for Capital Investments Need Strengthening (GAO/RCED-93-55, Jan. 14, 1993).

Air Traffic Control: Advanced Automation System Still Vulnerable to Cost and Schedule Problems (GAO/RCED-92-264, Sept. 18, 1992).

FAA Budget: Key Issues Need to Be Addressed (GAO/T-RCED-92-51, Apr. 6, 1992).

Air Traffic Control: Status of FAA's Modernization Program (GAO/RCED-92-136BR, Apr. 3, 1992).

Air Traffic Control: Software Problems at Control Centers Need Immediate Attention (GAO/IMTEC-92-1, Dec. 11, 1991).

Air Traffic Control: FAA Can Better Forecast and Prevent Equipment Failures (GAO/RCED-91-179, Aug. 2, 1991).

Air Traffic Control: Status of FAA's Modernization Effort (GAO/RCED-91-132FS, Apr. 15, 1991).

Air Traffic Control: FAA's Advanced Automation System Contract (GAO/IMTEC-91-25, Mar. 5, 1991).

Air Traffic Control: Continuing Delays Anticipated for the Advanced Automation System (GAO/IMTEC-90-63, July 18, 1990).

FAA Encountering Problems in Acquiring Major Automated Systems (GAO/T-IMTEC-90-9, Apr. 26, 1990).

Federal Aviation Administration's Advanced Automation System Investment (GAO/T-IMTEC-88-3, Apr. 12, 1988).

Air Traffic Control: FAA's Advanced Automation System Acquisition Strategy Is Risky (GAO/IMTEC-86-24, July 8, 1986).

GAO Questions Key Aspects of FAA's Plans to Acquire the Multi-Billion Dollar Advanced Automation System and Related Programs (GAO/IMTEC-85-11, June 17, 1985).

STATEMENT OF RICHARD JOHN

Mr. CARR. Dr. John.

Dr. JOHN. Thank you, Mr. Chairman. As you suggested, I will read an abbreviated version of my statement and request that the full statement be placed in the record.

I am pleased to testify today on the recent Volpe Center study of the FAA's modernization of the hardware and the software at the heart of the Nation's air traffic control system, a program known as the Advanced Automation System.

This committee's report accompanying last year's Department of Transportation appropriation bill directed a comprehensive benefit-cost study be performed on the individual segments of this program by the Volpe Center. In my testimony today, I will describe the conclusions of the study which was initiated this past November and is now being documented.

Three different types of Federal Aviation Administration facilities are involved in controlling air traffic: Airport towers manage aircraft on the airport runways during takeoff and landing and in the air space out to about five miles from the airport. Terminal area control facilities have responsibility for aircraft approaching and leaving airports out to about 60 miles from the airport. Finally, in the regions between airports and their surrounding terminal areas, planes are under the control of enroute centers.

Air traffic controllers in each of these facilities are thus able to monitor and control aircraft throughout their flights, assigning routes, maintaining safe separation and sequencing them into their destination airports. A force of over 9,000 maintenance personnel is required to keep the system operating, about 20 percent of whom maintain the traffic control automation system elements. So the AAS then involves about 20 percent or about 2,000 of the maintenance personnel in the FAA.

At the heart of this complex system are the computers and communications that take in radar and other data, process it and display it on console screens. Much of the system is quite old with the result maintenance requirements and costs are increasing rapidly. Overall functionality is limited by the computer and display technology, much of which was installed in the 1970s and embodies technology dating from the 1950s and the 1960s. The 1200 controller consoles at the 20 enroute centers now experience an average of one failure every five weeks for each unit.

The Federal Aviation Administration's basic vision for the upgrade of the automation elements in the Airport/Airway System is twofold. First, new computer hardware, display equipment and operating software will replace existing components. This will create a basic automation foundation, often referred to as a platform, based on the newest technologies.

Second, with this platform in place, the entire air traffic control process can be re-engineered, based on new methods and software tools now being created in the FAA research and development program.

This modernization represents an important conceptual change. The situation is analogous to replacing a single-function word processing system, such as were common in the 1970s, with a powerful

1993 version of the personal computer, operating in a local area network and linked to the world by data lines. You may still use the new system for word processing, but as time passes and your needs evolve and become more complex, it is readily applied to new use simply through installation of new applications' software.

Further, just as personal computers are now built so that the user could easily upgrade by installing new and more powerful microprocessor chips, the Advanced Automation System hardware and software elements are being developed in modular form to facilitate growth and take advantage of future improvements where needed.

Now a few words about our cost-benefit methodology.

First, with regard to cost. Our approach to the cost-benefit study included a detailed analysis of projected costs of both the current and new automation systems. The baseline costs for the existing automation elements were determined from such sources as en-route, terminal area and airport facility lists, FAA spare parts schedules, staffing standards and maintenance histories.

Maintenance costs for the baseline case were projected on the basis of the best existing model and data for aging electronic and electromechanical systems, as determined from the Department of Defense.

We did a major study to try to find out how does the equipment deteriorate essentially after it has exceeded its useful lifetime. The best data we could get then was from DOD.

Next, with regard to how we estimate benefits in our study, we assessed benefits from two perspectives, first, the provider and then the user of air traffic services.

The providers are the FAA's Airway Facilities and Air Traffic organizations. The users include the air carriers with consideration of general aviation and air passengers.

Based on this cost-benefit methodology, these are our findings. First, I will present our results from the perspective of the system providers, namely FAA Airway Facilities and Air Traffic organizations, and next from the viewpoint of the system's users, that is the air carriers in general aviation and the air passengers.

First, from the viewpoint of the FAA facilities organization. The total cost for continued operation of the baseline system through the year 2020 is projected to approach \$10 billion. The cost for implementation and subsequent maintenance of the new automation system through 2020 is about the same, within the uncertainties of discount rates on the growth rate to be expected for maintenance costs in years beyond the design life of the system elements.

Far more important, however, is the potential for reliability problems in the existing system increasing to the point that system operations are seriously affected, accompanied by increasing practical inefficiencies and diminished productivity throughout the organization. Indeed, even if its operational constraints could be tolerated, it is unlikely that the present system could be supported through the 2020 time frame.

Next, from the perspective of the FAA Air Traffic organization. We believe the controller productivity may increase significantly, but verification and quantification of this result must await availability of the new platforms, the first of which will be installed in

Seattle in October, 1996. Current research will also shed light on this subject. We were unable then to find quantitative information or get any agreement on quantitative information with regard to improvements in the productivity of Air Traffic controllers.

Now, moving to the system users and the air carriers.

The introduction of new automation in the terminal area will make it possible to introduce new application software and control procedures to better sequence the incoming traffic flow and potentially reduce time lost due to arrival delays in high density traffic airports by up to 7 or 8 percent based on current traffic projection.

The full plan conversion of the enroute centers will provide the possibility of introducing new air traffic control procedures that will permit the air carrier to operate with preferred routes and altitudes and thereby reduce flight times and operating costs.

As part of our study, we examined over 11,000 actual flights occurring over a three-day time period. We found that cumulative flight time and operating costs could be reduced by approximately 2 percent overall or an annual saving to the airline industry of about \$200 million in fuel. Virtually all of these benefits accrue to flights of 500 miles and longer. Achieving this result, however, also requires successful completion, as was mentioned earlier, of a research and development program and effective implementation of its findings.

All of this translates into important potential benefits for air carriers in terms of fuel savings and reduced crew time. In addition, aircraft utilization may be improved significantly. To the degree that preferred routes and altitudes reduce delays, yield shorter schedule flight times, airlines will be able to increase aircraft flights per day, potentially reducing fleet requirements.

General aviation in particular will benefit from the improved information controllers are able to provide concerning weather resulting from more complete integration of weather information into the automation system.

Finally, with regard to the air passenger, the time savings to the passenger resulting from improved automation are only a few minutes per flight. This is likely to be insignificant to most passengers when compared to their total trip time. This finding may be contentious, but it is our firm conviction. The major benefit for the airline passenger will be improved adherence to flight arrival schedules due to the introduction of better methods and tools to respond to weather and other special circumstances.

In closing, the system modernization embodied in the advanced automation program is more than renewal of obsolescent technologies. It replaces equipment dedicated to specific functions with much more powerful computer platforms capable of supporting a wide range of new applications, some as yet not envisioned. It will provide the foundation for re-engineering the entire air traffic control enterprise in much the same way people now are talking about re-engineering business enterprises. Here there is the possibility for essentially re-engineering the entire air traffic control enterprise, resulting in a robust and flexible technological base with which to meet the known and unknown challenges of 21st century aviation.

However, as was indicated by the previous speakers, no program of this scope and ambition is free of risk. The technical challenges are large, and our ability to devise and gain acceptability for new tools and procedures may fall short. The most important benefits—and I will repeat—the most important benefits cannot be quantified at this time. However, the risk of trying instead to patch together the existing system for the study period clearly carries the far greater risk of a limping air traffic control system subject to ever larger and more damaging disruption.

One final point: The global market for air traffic control systems is growing at a rate of 10 percent annually. Currently about \$7 billion per year, the air traffic control market is expected to reach more than \$14 billion per year by 2002. It is already a fiercely competitive business, particularly since it is dominated by firms seeking to broaden their nondefense work. The capabilities, credibility and competitiveness of American firms in this arena will be strongly affected by the degree to which the United States air traffic control system reflects technical leadership and demonstrates the benefits of advanced technology.

That is my closing, and I am pleased to answer any questions you might have.

[The prepared statement of Dr. John follows:]

**Statement
of**

**RICHARD R. JOHN
Director**

JOHN A. VOLPE NATIONAL TRANSPORTATION SYSTEMS CENTER

**Research and Special Programs Administration
U.S. Department of Transportation**

on the

**ADVANCED AUTOMATION SYSTEM
BENEFIT-COST STUDY**

**Before the Subcommittee on Transportation
Committee on Appropriations
U.S. House of Representatives**

April 19, 1993

Mr. Chairman and Members of the Sub-committee:

I am pleased to testify today on the recent Volpe Center study of the FAA's modernization of the hardware and software at the heart of the nation's Air Traffic Control (ATC) system, a program known as the Advanced Automation System, or AAS. This Committee's Report accompanying last year's Department of Transportation appropriation bill directed that a comprehensive benefit-cost study be performed on the individual segments of this program by the Volpe Center. In my testimony today, I will describe the conclusions of the study, which was initiated this past November and is now being documented.

BACKGROUND

Three different types of Federal Aviation Administration facilities are involved in controlling air traffic. Airport towers manage aircraft on the airport runways during takeoff and landing and in the airspace out to about five miles from the airport. Terminal area control facilities have responsibility for aircraft approaching and leaving airports for a distance extending from about five miles out to about 60 miles from the airport. Finally, in the regions between airports and their surrounding terminal areas, planes are under the control of Enroute Centers in the continental U.S. Air traffic controllers at each of these facilities are thus able to monitor and control aircraft throughout their flights, assigning routes, maintaining safe

separation, and sequencing them into their destination airports. A force of over 9,000 maintenance personnel is required to keep the system operating, about 20% of whom maintain the traffic control automation system elements.

At the heart of this complex system are the computers and communications that take in radar and other data, process it, and display it on console screens. These screens are the window through which the controller receives most of the information needed to assure the safe and efficient movement of traffic through the region of his or her responsibility.

Much of the system is quite old, with the result that maintenance requirements and costs are increasing rapidly. The system is inflexible, and overall functionality is limited by the computer and display technology, much of which was installed in the 1970's and embodies technology dating from the 1950's and 1960's. The 1200 controller consoles at the 20 enroute centers now experience approximately 12,000 failures of components every year -- an average of one failure every five weeks for each unit.

The Federal Aviation Administration's basic vision for the upgrade of the Airport/Airway System is twofold. First, new computer hardware, display equipment and operating software will replace existing components. This will create a basic automation foundation -- often referred to as a "platform" -- based on the newest technologies. Second, with this platform in place, the entire air traffic control process can be re-engineered, based on

new methods and software tools now being created in the FAA research and development program. These changes will greatly advance the ability of controllers to manage traffic in a more flexible and efficient manner, with benefits to FAA, carriers, and passengers.

This modernization represents an important conceptual change. The situation is analogous to replacing a single-function word processing system, such as were common in the 1970's, with a powerful 1993 version of the personal computer, operating on a local area network and linked to the world by data lines. You may still use the system for word processing, but, as time passes and your needs evolve and become more complex, it is readily applied to new uses simply through installation of new software. Further, just as personal computers are now built so that the user can easily upgrade by installing new and more powerful microprocessor chips, the Advanced Automation System hardware and software elements are being developed in modular form to facilitate growth and take advantage of future improvements where needed.

Whenever computers and other new technologies are introduced into the workplace, it is not assured that the full benefits potentially available will be obtained immediately. Effective use of automated tools and information technology requires re-engineering the entire process, and often the whole enterprise. Many of the people involved will find that new systems change the way they work and even the nature of their jobs. Development of revised

procedures and training, and gaining controller confidence and acceptance will be critical to implementation.

The advanced automation program includes several major segments. The first automation phase has been focused on the enroute centers. As part of this effort, the communications equipment that connects those centers with external systems, such as radars, has nearly been completed. Current emphasis is on replacement of the controllers' aging display monitor and other tools with a color-display workstation which is in itself a powerful computer capable of working in a distributed-processing mode. This is a particularly critical segment of the advanced automation program, since it will be the basis for subsequent system hardware and software expansions. This workstation is the heart of what IBM is currently developing for FAA.

The next program segment will be the upgrade of terminal area facilities by replacing the main computer and displays used for controlling approaching and departing aircraft. This segment will include installation of controller workstations similar to those in the enroute centers, but also includes replacement of the terminal area facility's primary computer system.

Moving next to the airports, comprehensive integrated display systems will be provided for tower controllers, and the interface to the terminal area facilities will be upgraded.

The final stage of the advanced automation program is replacement of the existing mainframe computers at the enroute centers, along with the over-20-year-old software designed for their predecessors, and linking of the enroute and terminal systems into a distributed computing facility.

COST-BENEFIT METHODOLOGY

Costs. Our approach to the cost/benefit study included a detailed analysis of projected costs of both the current and new automation systems, based on data from a variety of sources. Although it is not considered feasible to continue operation of the existing system through the year 2020, it was used in the study as a baseline for comparison purposes. The baseline costs for the existing automation elements were determined from such sources as enroute, terminal area and airport facility lists, Federal Aviation Administration spare parts schedules, staffing standards and maintenance histories. The time period considered was 1993 through 2020, based on a nominal 25-year expected lifetime for new equipment.

Maintenance costs for the baseline case were projected on the basis of the best existing model and data for aging electronic and electromechanical systems, as obtained from the Department of Defense. The largest uncertainty and most critical consideration pertained to the assumed rate of maintenance cost growth for those components past the end of their design life, since little data is available for air traffic control equipment operated

beyond its nominal lifespan of 25 years. The information that does exist suggests that an annual growth of 5% to 10% in maintenance cost is a conservative expectation. A 10% growth implies a doubling every 7 years and quadrupling in 14 years; ultimately it is not sustainable.

A detailed analysis was also conducted to estimate the costs of the improved automation system, broken down by segment for four alternative program scenarios, including both capital investment and hardware and software maintenance. Construction of new facilities, telecommunications costs, and expenses for personnel relocation were also included.

In projecting future total costs for each of the different automation segments, estimates were made of development, facility, equipment and transition costs.

Benefits. In our study we assessed benefits from two perspectives: the provider and the user of air traffic services.

The providers are the FAA's Airway Facilities and Air Traffic organizations. The quantitative Airway Facilities benefits were estimated by comparing the costs, determined as I just described, for each automation segment through the year 2020 with the costs of that segment over the same time period if no changes were made. The study also considered improvement of air traffic controller productivity.

The users include the air carriers, with consideration of general aviation, and air passengers. Benefits for the air carriers and general aviation included estimates of the reduction of enroute operating time and enroute, terminal area and airport delays. Benefits for the passengers were also estimated based on time savings.

Another beneficiary, outside the scope of the study, is the Department of Defense, which is planning to use the platform provided by the terminal elements of the automation program as the basis for its future radar approach control facilities.

FINDINGS

System Providers

FAA Airway Facilities Organization. The total cost for continued operation of the baseline system through the year 2020 is projected to approach \$10 billion. The cost for implementation and subsequent maintenance of the new automation system through 2020 is about the same, within the uncertainties of discount rates and the growth rate to be expected for maintenance costs in years beyond the design life of the system elements. Although the new system, being software intensive, will have higher software maintenance costs, equipment maintenance should be far lower than for the baseline, and stable, rather than increasing rapidly with time. There is a

strong, though unquantifiable potential for significant savings in training and maintenance logistics as a result of standardization of system components.

Far more important, however, is the potential for reliability problems in the existing system increasing to the point that system operations are seriously affected, accompanied by increasing practical inefficiencies and diminished productivity throughout the organization. Indeed, even if its operational constraints could be tolerated, it is unlikely that the present system could be supported through the 2020 timeframe.

FAA Air Traffic Organization. We believe that controller productivity may increase significantly, but verification and quantification of this result must await availability of the new platform, the first of which will be installed in Seattle in October, 1996. Current research will also shed light on this subject.

Potentially-important benefits are also anticipated in terms of controller training, due to standardized improved methods and tools; increased confidence in system reliability; and reduced operational stress associated with the availability of more accurate and timely airspace information and better tools for controlling and managing traffic.

More generally, advanced automation will allow a much more effective and flexible response to changing future requirements, including effects of the

next generation of aircraft and possible changes in patterns of airport and airway utilization.

System Users

Air Carriers. The introduction of new automation in the terminal area will make it possible to introduce new application software and control procedures to better sequence the incoming traffic flow and potentially reduce time loss due to delays by 7% or 8%, based on current traffic projections. This is also the subject of an ongoing research and development activity.

The introduction of new automation into the enroute centers provides the potential to increase enroute capacity through restructuring of airspace and improved operational flexibility. This is a significant benefit in those situations in which enroute capacity is a limiting factor.

The full planned conversion of the enroute centers will provide the possibility of introducing new air traffic control procedures that will permit the air carrier to operate with preferred routes and altitudes and thereby reduce flight times and operating costs. As part of our study we examined over 11,000 actual flights occurring over a 3-day time period. We found that cumulative flight time and operating costs could be reduced by approximately 2% overall, or an annual savings to the airline industry of \$200 million in fuel alone, and additional substantial savings in crew costs. Virtually all of

these benefits accrue to flights of 500 miles and longer. Achieving this result also requires successful completion of a research and development program and effective implementation of its findings.

All of this translates into important potential benefits for air carriers in terms of fuel savings and reduced crew time. In addition, aircraft utilization may be improved significantly. To the degree that preferred routes and reduced delays yield shorter scheduled flight times, airlines will be able to increase aircraft flights per day, potentially reducing fleet requirements.

General aviation in particular will benefit from the improved information controllers are able to provide concerning weather, resulting from more complete integration of weather information into the automation system.

Air Passenger. The time savings to the passenger resulting from improved automation are only a few minutes per flight. This is a relatively small improvement in flight time, and is likely to be insignificant to most passengers when compared to their total trip time. The major benefit for the airline passenger is improved adherence to flight arrival schedules due to the introduction of better methods and tools to respond to weather and other special circumstances.

In summary, the study showed that all segments of the AAS system are cost-effective. Benefits for the providers and users arise to a large degree from different elements of the program. The operating cost savings experienced by carriers and reduced delays for passengers are associated primarily with improvements at the 20 enroute centers and a small number of terminal area facilities in high traffic density locations. On the other hand, the reduced maintenance costs that represent the principal quantifiable provider benefit arise mainly from modernization of the many towers and low-density terminal area facilities, since they are the location of the great majority of ATC equipment.

CLOSING REMARKS

The system modernization embodied in the advanced automation program is more than renewal of obsolescent technologies. It replaces equipment dedicated to specific functions with much more powerful computer platforms capable of supporting a wide range of new applications, some as yet not envisioned. It will provide the foundation for re-engineering the entire air traffic control enterprise, resulting in a robust and flexible technological base with which to meet the known and unknown challenges of 21st century aviation.

No program of this scope and ambition is free of risk. The technical challenges are large, and our ability to devise and gain acceptability for new

tools and procedures may fall short. The most important benefits cannot be quantified. However, the risk of trying instead to patch together the existing system for the study period clearly carries the far greater risk of a limping Air Traffic Control System subject to ever larger and more damaging disruptions.

One last point. The global market for air traffic control systems is growing at a rate of 10% annually. Currently about \$7 billion per year, the ATC market is expected to reach more than \$14 billion by 2002. It is already a fiercely competitive business, particularly since it is dominated by firms seeking to broaden their non-defense work. The capabilities, credibility and competitiveness of American firms in this arena will be strongly affected by the degree to which the United States Air Traffic Control System reflects technical leadership and demonstrates the benefits of advanced technology.

I am pleased to answer any questions you may have on this study.

BENEFITS

Mr. CARR. Thank you very much to all three panelists. Your advice to us on these matters is most important, and your credibility is very significant.

If I can just offer a sort of summation here in terms of what I basically hear from all three of you is that, from your judgment, we are still speculating about what the benefits of this are or is and that basically we are not making this investment from the standpoint that we think things are going to make great quantum leaps in terms of cost savings, trip time savings. Basically, we are making this investment to prevent things from getting worse.

Dr. JOHN. That would be a summation of what we were trying to say, yes.

Mr. CARR. That we may have some marginal improvement in flexibilities and longer-term options because we have reconfigured the architecture of the system. It may have benefits that we can't quantify that you point out right now, but we have to just do it because if we did nothing and patched together the existing system we would be—we would at some point pass a maintenance—critical mass-of-talent type problem that might see the system on the verge of collapse. Is that—

Dr. JOHN. That is what we were trying to say, yes.

The system, in many cases, will exceed its normal lifetime. And after that, as I said, the data we were able to obtain from DOD is really not clear—when a system exceeds its normal lifetime, in this case by the year 2020, some components could be 50 years old, there is very little data as to what happens in that situation.

Mr. MEAD. I think, Mr. Chairman, that the system's essential design is to improve the reliability of the current system, replace old stuff and to provide a platform for additional possibilities not yet well defined.

Mr. LI. Mr. Chairman, from my perspective, yes, it is true, from the methodology that Volpe used, they compared the current design of AAS with what is there right now.

However, perhaps another question that should be asked is whether or not that particular design is the most cost-effective way of doing things now. They compared doing nothing with one alternative. We know that perhaps that alternative that they currently have on the books is about the same—will have—will create the same life cycle costs. We don't know whether or not the follow-on segments will be less expensive if they took another alternative.

Mr. CARR. Well, I guess what I am interested in doing is trying to get a baseline here. You gentlemen seem to be suggesting that we really ought to be junking our original notions of what this was going to do.

Dr. JOHN. I think that GAO mentioned earlier that during the course of this program there really have been three fundamental changes on which the original requirements were based. Essentially, one fundamental change is now the FAA has decided to have minimum consolidation of the air traffic control and the terminal centers rather than full consolidation.

The other thing that has occurred is, during the period that this program has been in progress, that the FAA now manages air traf-

fic control in a different manner. So any flight you take, rather than now circling over the airport or the air region in which you are entering the plane, is now held on the ground. So, initially, when the program was started, the bottleneck, if you will, in the system was on the air space. Now it is increasingly moving to the terminal air space on the ground.

The other thing that has occurred since the beginning of this program is that with airline deregulation and essentially hub and spoke operation, again there is emphasis on what is happening on the terminal air space and what is happening on the airport surface in terms of how much-what volume they can handle.

Mr. MEAD. Your specific point, if I understood it right, was the changing landscape on benefits. And what was originally posited back in 1981, 1983, 1985, 1987, 1988, in terms of controller productivity, maintenance technicians that you might need and user benefits have swung—made very wild swings, fairly dramatic ones. Take—as I understand the Volpe study, you have about 1.5 billion in user benefits—just a couple years ago it was around \$10 billion.

ALTERNATIVES

Mr. CARR. Well, not to belabor the point, I guess what I am asking is also your recommendation that this Committee and others in Congress stop beating the dead horse of a system that doesn't live up to expectations that were laid out for it in the early 1980s. And should we just junk that whole thing and move on? I mean, we can go down the list of everything that was said in the early 1980s about why we ought to make this investment and every time somebody comes before us we can, you know, beat it to death about how it isn't doing it. And should we just say, look, you know, we all didn't know enough at the time we did it.

And now we are in this situation. This is about replacing the aging and soon to be obsolescent system we have now. And if we can replace it and at the same time get some additional benefits that, hopefully, will give this a lifetime that will be a little longer than the last system, we ought to do it.

But then, to Mr. Li's point of view, we are comparing doing nothing with doing what we are doing, and——

Mr. LI. That is right.

Mr. CARR [continuing]. And the program has inertia. It is on a path now. Do we really have an opportunity to stop now once again and look at a whole host of other alternatives?

Mr. LI. I think there is. I think——

Mr. CARR. What are those alternatives?

Mr. LI. The situation is this, as Ken was saying, the original design called for a massive consolidation of the terminal areas and the en route centers into 22, 23 centers. Now that we are no longer going to have that massive consolidation, that engine that was going to be driving that ACF is going to be much smaller. This is an opportunity for FAA to now look at things like the stringency of its requirements in terms of up time.

At one time, because of the ACF concept, there was a fear that if that one center that controlled so much air space went down, it had to have a very high liability rate. Now with the—a different

set of circumstances, that particular requirement may no longer hold true.

Those are some of the things that I believe are worth looking at. That adds a high impact on the cost that would come out of the design from IBM.

Mr. CARR. We will hear momentarily from the FAA what benefits they think they are going to achieve from a more limited consolidation and how it will drive the requirements, but are you suggesting, Mr. Li, that we ought to have a complete revamping of the requirements?

Mr. LI. No, no, I am not. What I am saying is that through ISSS, we are encouraged by the management initiatives that FAA and IBM have put in place. That is one—obviously that is a second segment of AAS. The follow-on segment, TAAS, is going to build upon ISSS. The segment, Mr. Chairman, that I am the most concerned about is that final one on ACCC, that big engine at the end, the one that is the most sensitive to this consolidation. That is the one that I believe that FAA should be revisiting.

In our conversation last week with the acting administrator, we conveyed to him our concerns about IBM being provided with sufficient information before they can go ahead and redesign. He assured us that was going to be the case.

Mr. MEAD. Mr. Chairman, I might add, we are 10 years into this and we had some pretty dramatic changes before us. Apart from consolidation, we no longer know what is going to be done with the towers, so if you ask for what the alternatives are there, certainly that is a clear opportunity for FAA to decide what is it going to do with the towers and why.

Similarly with the terminals, we are not sure what we are going to do with the terminals now under the consolidation plan, the B-9, what they call metro flex facilities which would consolidate some of the terminal facilities, but most of them would be stand-alone still. What are we going to put in there and why?

Further, they want to advance this fuel efficient route saving function to now, when, under the—for the last decade, it has been the last step, and I think the industry is going to have fairly high expectations as what is this going to provide, you will want to know how much it will cost, what are they going to do inside the terminal area where most of the delays are occurring. Issues like that.

So I think for these latter phases, the time is right for FAA to try to establish what its requirements are and to provide justification in the way of benefits.

Mr. CARR. We have a number of questions that we are going to ask for the record, but in the interest of time and given that we are going to go right through the lunch hour, I would like to get to the FAA witnesses. We really thank you for your time and attention and as always, you have helped this Committee greatly in making our oversight responsibilities more on the mark.

Thank you so much.

QUESTIONS FOR FIRST PANEL

BENEFITS

Mr. CARR. Mr. Mead, in the early 1980's when AAS was begun, the FAA based the investment on the following expected benefits: Reduction of 50 percent in the controller workforce; reduction of 30 percent in FAA's computer maintenance workforce; fuel savings of 6 percent due to fuel-efficient route planning; and passenger time savings, mostly in increments of 15 minutes or less, valued in billions of dollars.

I know the GAO has raised concern in past years about FAA's calculation of these benefits, believing that many were overstated. Which of these benefits do you still question and why?

[GAO response follows:]

We still question FAA's original assumptions regarding reduction in the controller workforce, reduction in the maintenance workforce, and passenger time savings. We believe that the most realistic benefit-cost analysis to date is contained in a study recently completed by the Department of Transportation's Volpe National Transportation Systems Center. This study projects that FAA will roughly break even with its investment in AAS. According to the Volpe study, savings in maintenance costs will just about equal the capital investment required for AAS. The report does not project any reductions in the controller workforce. The study projects roughly \$1.5 billion in benefits to the air carriers and \$3.5 billion in benefits from passenger time savings. The report also notes that most of the passenger time savings will come in increments of 15 minutes or less.

FUEL SAVINGS EXPECTED

Mr. CARR. Let's focus on the fuel savings expected from AAS. As a benchmark let me mention that in October 1981 the FAA estimated savings of 1 billion gallons of aviation fuel in 1993. This represents the average amount of fuel consumed today by the entire U.S. air carrier fleet, on domestic routes, for a one-month period. At today's price (62.5 cents per gallon), that would be valued at approximately \$625 million. These savings would be realized each year.

Dr. John, how do these original estimates compare to those found in your current benefit cost study?

[The information follows:]

Since the 1981 estimates, there have been significant reductions of in-flight delays, which are the result of flow control and traffic management procedures. Currently, en route delays account for less than 1 percent of all National Airspace System delays. In 2001, the first year of full AERA implementation, we estimate fuel savings of 150 million gallons, or \$92 million.

Mr. CARR. Most of the fuel savings come from the ability of AAS to provide user-preferred routes. I understand that the Volpe Center reduced the universe of U.S. flights on which such routes are likely to be granted. For example, all flights under 500 miles were not believed feasible for such routes and were excluded. Dr. John, can you explain such rationale for determining how many flights might realistically receive user-preferred routing?

[The information follows:]

Discussions with FAA Air Traffic personnel indicated that it is not clear how user preferred trajectories could be granted for the approximate 200 mile terminal airspace surrounding the origin and destination of a flight. Correspondingly, trips of less than 500 miles were not considered applicable to benefits of user preferred routes.

BENEFITS TO GENERAL AVIATION

Mr. CARR. Dr. John, the original AAS program assumed that general aviation aircraft would receive benefits from the program of approximately 4.5 percent in fuel savings. Since flights less than 500 miles received no fuel savings benefits in your study, can we assume that there are few benefits of AAS to general aviation users?

[The information follows:]

For the data sample in our study, the majority of general aviation business flights which include commuter and executive aircraft are concentrated on legs of less than 500 miles. Thus, this group would accrue a very small percentage (1-2 percent) of the total benefits. The color display capability of the common consoles will provide enhanced capabilities for handling current and planned weather products of which the general aviation group of users is a major beneficiary. These benefits were treated qualitatively in the Volpe study.

MITRE CORP. STUDY VS. VOLPE CENTER STUDY

Mr. CARR. Dr. John, in 1987, the Mitre Corporation produced a benefit-cost study on AAS which attributed most of the \$62 billion in quantifiable AAS benefits to user-preferred routes. The Volpe Center benefit-cost study only estimates about \$1.3 billion in air carrier benefits. Why did these two studies reach such different conclusions?

[The information follows:]

The \$62 billion benefit figure quoted in the 1987 Mitre study represented the benefits of the entire Capital Investment Plan. That study did estimate a total of \$9.4 billion AAS benefits (in 1988 dollars) of which \$6.8B was for user preferred routes.

A 1991 update to the Mitre study revised the \$9.4B AAS benefits value upward to \$14.6 billion (1991 dollars) of which \$9.5 billion was due to user preferred routes. Only \$2.9 billion were air carrier savings. The remainder was for passenger time savings. The Volpe study estimated \$1.4 billion in air carrier savings due to user preferred routes. The main difference between the Volpe study and the previous studies is due principally to the exclusion in the Volpe study, of flights under 500 miles, or roughly half the flights. The Volpe Center study also used the conservative figures of \$1650 per aircraft flight hour, and an AERA effectiveness (i.e. the percentage of flights granted user preferred routes) of 60 percent. Recent discussion with the Air Transport Association indicates that \$1950 per average aircraft flight hour might be more realistic, and the assumed AERA effectiveness should probably be increased somewhat. If one assumes an aircraft average operating cost of \$1950/hour and 100 percent AERA effectiveness, the air carrier benefits increase to \$2.7 billion.

TIME SAVINGS FOR PASSENGERS

Mr. CARR. Another major benefit was time savings for passengers. I know the GAO never accepted the value of these savings, since most of them were savings of 15 minutes or less, and occurred on long trips. The Volpe Center report concludes that AAS shows the potential to save flight times of approximately 3.3 percent, for those flights receiving user-preferred routes. On a coast-to-coast flight, that translates to about 10 minutes of time savings. Would both of you agree that such savings are almost irrelevant, since they represent an insignificant percentage of total trip time?

[GAO response follows:]

We believe that these savings are questionable given the small amount of actual time savings and because a standard wage rate is applied to all passengers including children.

[Response from Dr. John follows:]

Yes, it is almost irrelevant. Our data indicated that only 1 percent of the user preferred routes had savings of more than 15 minutes. Passenger time saving are included in our study to facilitate comparison with previous studies.

REDUCED FAA CONTROLLER WORK FORCE

Mr. CARR. Since the estimate of fuel savings has been reduced and passenger time savings virtually eliminated, it would seem that the benefits from reducing FAA's controller work force would become even more important for justifying the AAS program. In 1982, FAA Administrator Helms estimated that with the AAS and consolidation efforts, the agency would be able to meet its requirements with only 9,500 controllers, compared to 28,800 without it. That is a huge drop. (About two-thirds of the planned work force) Yet now the controller work force sits at about 17,800 and FAA has all but abandoned its once-ambitious plan to consolidate facilities and use automation to enable a dramatically reduced FAA work force. Mr. Mead, how many of these AAS benefits can we now expect?

[GAO response follows:]

We see no significant decrease in the controller work force resulting from the implementation of AAS. This same conclusion was reached in a 1988 benefit/cost analysis of AAS conducted by the Mitre Corporation. The Volpe Center report stated that AAS may provide some controller productivity benefits, but that they could not be quantified at this time.

FAA FORECASTS OF AIR TRAFFIC GROWTH

Mr. CARR. The need for AAS was also driven by very optimistic FAA forecasts of air traffic growth. A January 1982 DOT study prepared at the request of this Committee warned, however, that "a reduction in forecast traffic growth which is in excess of 50 percent would. . . result in an unfavorable verdict with regard to the far term computer replacement options" [which later became known as AAS]. The FAA is now projecting average annual growth in domestic passenger miles of 3.9 percent over the time period 1992-2004. This is significantly higher than a similar estimate of 2.6 percent made by McDonnell Douglas and higher than the FAA's 1993 growth estimate of 2.6 percent.

Do either of you know what the original assumptions were regarding air traffic growth, when AAS was originally justified, and how that compares to today's lowered estimates?

[GAO response follows:]

We do not know what traffic growth assumptions FAA used originally to justify AAS. We only know that when AAS was initiated in 1983, FAA estimated that for the year 2000 there would be about 59 million instrument operations. This estimate was revised downward to about 54 million instrument operations, a decrease of about 10 percent, in FAA's 1993 Aviation Forecasts.

[Dr. John's response follows:]

The Volpe Center used a 2 percent traffic growth rate forecast in the conduct of the AAS study. This value was selected after consultation with the FAA. While having no specific knowledge of how the 3.9 percent and the 2.6 percent traffic growth values were arrived at by the FAA and Mitre, we would note that during the years from 1968 to the early 1980's aviation growth rate projections well above 2 percent were not uncommon.

Mr. CARR. Dr. John, if air traffic growth remains flat, what would this mean for AAS benefits?

[Dr. John's response follows:]

First, benefits to the provider, FAA, resulting from equipment replacement and modernization would remain essentially unchanged. However, user benefits estimated in our study are based primarily on the effects of AERA and would be less. With no growth in air traffic, there will not be as many flights to improve. The assumption of no growth would reduce the projected benefits of AERA to air carriers from \$1.4 billion to \$1.0 billion. Additional benefits identified with the CTAS for terminal area operations depend upon reducing delays in congested terminal areas. If these delays did not grow, the opportunity for savings would be reduced. Thus, air carrier benefits would be reduced from \$349 million to \$183 million and passenger benefits would be reduced from \$849 million to \$444 million.

AIR TRAFFIC DELAYS

Mr. CARR. Dr. John, when AAS was begun, much of the air traffic delay was attributable to en route congestion. Therefore, AAS was designed to focus first on providing benefits to travelers in the en route airspace. However, since then much has changed. FAA's flow control management system now enables the agency to hold aircraft on the ground when there are en route delays, saving fuel, rather than having them delay while in the air. In addition, the hub and spoke system of air travel has changed the character of delay significantly. Isn't it true that much more of our ATC delay now occurs in terminal airspace than en route airspace, and how should that affect our thinking about the AAS program?

[Dr. John's response follows:]

Due to flow control, much more of our ATC delay now occurs on the ground and within the terminal airspace, rather than within the enroute airspace. The airline savings from the AAS are now identified primarily with user preferred routes instead of reduced delays in the enroute airspace. In addition, AAS is very much needed as an infrastructure modernization program to replace the current aging ATC equipment and is a necessary platform to introduce advanced ATC procedures.

Mr. CARR. Because of this change, should we give a higher priority to the development of AAS subsystems such as Terminal Advanced Automation System (TAAS) and less emphasis to en route subsystems and Advanced En Route Automation (AERA)?

[Dr. John's response follows:]

Although an emphasis on terminal operations is appropriate, the TAAS segment of AAS builds upon the enroute ISSS segment and cannot be implemented without a functional ISSS. Since flight times with the terminal area are relatively short, smaller air carrier benefits accrue there. In addition, if the enroute portion is deemphasized, the opportunity for AERA to accommodate user preferred routes could be diminished, thus significantly reducing overall air carrier benefits.

Mr. CARR. Mr. Mead, what is your view of this subject?

[GAO response follows:]

We agree with your statement that the factors you have cited have shifted delays to terminal airspace, as well as to ground-holding delays. However, we have not analyzed how this shift in delay patterns should alter FAA's schedule for implementing ISSS and TAAS. The en route environment is expected to receive most of the software automation benefits from AAS through the AERA project. FAA has other research and development projects for enhancing the efficiency of the terminal airspace (e.g. TATCA). However, we believe FAA should continually re-evaluate its investment strategy for each type of airspace given projected changes in delay patterns and other factors.

IMPACT ON MAINTENANCE

Mr. CARR. Dr. John, your report concludes that benefits to the FAA resulting from reduced maintenance costs over the life of the

program are enough to justify the AAS investment all by itself. This is a surprising conclusion, since all of the previous studies emphasized other benefits. Why weren't these significant savings seen before?

[Dr. John's response follows:]

As early as 1981, reliability of ATC hardware and software had given rise to concerns that the cost of repairing and maintaining the present system would become excessive. Strategies for dealing with this were considered, and the FAA took a major step in replacing the IBM 9020 en route computers with the Host. This significantly reduced the concerns of the mid-1980's. The previous studies took place at a time when the AAS was expected to replace current equipment much earlier than the current schedule. Delayed introduction of AAS, combined with the increasing maintenance requirements experienced with the current equipment have elevated maintenance as an issue.

Mr. CARR. I understand that your maintenance savings estimate is based largely on anecdotal evidence presented at three en route centers. This was necessary because the FAA does not keep standardized data on maintenance costs for specific air traffic control equipment. Doesn't this lack of comprehensive data undercut your ability to accurately estimate system-wide benefits?

[Dr. John's response follows:]

The anecdotal evidence was presented to illustrate that although the analysis financially compares options to the current system, it is not operationally feasible to maintain the current system until the year 2020. In fact, a great deal of the study effort was directed toward a detailed examination of the current maintenance requirements of all automation components affected by the Advanced automation system. Specific current detailed data were gathered from FAA program managers, field offices, the FAA Technical center, and the FAA Depot, among other sources. The study results were based upon these detailed data and not upon this anecdotal illustration.

RELIABILITY REQUIREMENTS

Mr. CARR. Greater equipment reliability is needed for controllers to have confidence to grant user-preferred routes and reduce aircraft separation. The current AAS requirement is for 10,000 hours mean time between failure (MTBF) for the en route system, compared to 1,000 hours today. Mr. Mead, the FAA has set reliability goals before which were not based on any measure of what was cost-effective or technically feasible. How realistic is this goal?

[GAO response follows:]

It is difficult for us to assess whether the goal you mentioned, which equates to about 3 seconds of down-time per year, is realistic. Given the system stability problems described in our testimony, it is clear that IBM is still very far from achieving this goal. We have yet to see any evidence that FAA based its initial AAS reliability requirements on any measure of cost effectiveness or technical feasibility.

Mr. CARR. The current TRACON computer system already has a requirement of about 8,500 hours MTBF. Can we then assume that AAS will not offer the same degree of maintenance savings for TRACONs as it will for en route centers?

[GAO response follows:]

The Volpe Center report projected greater savings at the TRACON facilities because there are many more TRACONs than en route centers. With more TRACONs in operation, there will be much more equipment to maintain.

VOLPE MAINTENANCE GROWTH MODE

Mr. CARR. Dr. John, since the maintenance cost savings have now become so import for AAS justification, I am wondering how solid these estimates are. Because the FAA doesn't keep good maintenance records, I understand your maintenance growth model was based on data from the Department of Defense looking at such programs as the B-1 bomber. Can you describe this model to us, and tell us why we should accept the notion that the B-1 bomber's maintenance costs and the Air Force's maintenance philosophy are relevant to justify an FAA computer program?

[Dr. John's response follows:]

The maintenance growth model used in this analysis was based on complete data records and long-term maintenance histories of electronic equipment comparable to AAS and DoD/industry symposia on the topics of equipment aging and maintenance.

The model based on this data categorizes all equipment into three areas: electronic, electromechanical, and mechanical. The equipment considered in this analysis fall into the electronic and electromechanical areas only. The characteristics of the FAA automation equipment are very similar to those of the electronic equipment upon which the model was based. The FAA equipment requirements are more severe in some respects, since continuous operation is required.

Mr. CARR. What are the limitations of that model?

[Dr. John's response follows:]

The principal limitation is that the growth percentages used in the maintenance model are based on maintenance costs accounted within military programs rather than civilian. However, FAA equipment is procured largely to military specifications. Both FAA equipments and the subject military equipments have expected design lives of twenty-five years. We believe it is reasonable to assume that the DoD maintenance cost growth pattern is similar to that experienced with FAA equipment over similar time spans.

Mr. CARR. That model does not consider the incremental replacement of specific pieces of equipment which cause the greatest maintenance problems. Rather, it looks at an "all or nothing" replacement strategy for each AAS segment. Dr. John, why didn't you evaluate the relative benefits of an incremental replacement strategy?

[Dr. John's response follows:]

Our study does consider replacement at each facility type (en route, terminal and tower). Individual automation component replacements have not been defined within the AAS program. Rather, each segment is a sub-system replacement for a facility type. Our study reflects this.

FAA CONTROL OF SOFTWARE

Mr. CARR. These outyear maintenance savings assume that the FAA maintains strict control over the AAS software configuration. Past experience would not give us much confidence to believe that they will do this. Software control in the AAS program has been a major problem. Mr. Mead, how likely is it that the FAA can now accomplish strict control when they haven't in the past? Have you heard of any recent changes in the way they manage and oversee software maintenance?

[GAO response follows:]

FAA has acknowledged that it did not control software maintenance in the past. To address this shortcoming, the agency has implemented a number of corrective actions. For example, the agency has tried to limit the number of software patches

that field sites implemented in the past. We are encouraged by FAA's efforts. The April 1992 Volpe Report expressed concerns about software maintenance and support for AAS and recommended that FAA expedite creation of its new Operations Support Service (AOS). The AOS group is now in place at FAA. We believe it is too early to say whether the changes at FAA will help it control software development in the future. Progress in this area will have to be demonstrated by successful adherence to the revised plan for AAS development.

Mr. CARR. Dr. John, didn't your May 1992 report on the software development process for AAS find that the FAA had ineffective controls over the software configuration?

[Dr. John's response follows:]

Control over software configuration was one of the risks identified in the May, 1992 report. We are not current on all FAA efforts to mitigate this risk, but for the purpose of our benefit cost study we used the currently published FAA AAS implementation schedule.

AAS REQUIREMENTS

Mr. CARR. Mr. Mead, to what extent are the AAS requirements quantified and documented?

[GAO response follows:]

Requirements for AAS are documented in great detail; however, past problems have occurred because the requirements were changed or were internally inconsistent. We believe FAA and IBM have made progress in resolving inconsistent requirements and in placing new emphasis on controlling changes to these requirements.

AAS ALTERNATIVES

Mr. CARR. To what extent have alternative ways of achieving AAS benefits been quantified and compared against the AAS plan?

[GAO response follows:]

We have seen little evidence that FAA considered alternative ways to achieve AAS benefits.

Mr. CARR. What are some of those alternatives?

[GAO response follows:]

Since FAA has not explored alternatives, we do not know whether technically achievable and cost-effective alternatives exist for parts of the AAS project. Given the time slippage and development problems with AAS, we believe that it would be wise for FAA to identify and analyze alternatives for the later segments, particularly TCCC.

SYSTEM REQUIREMENTS

Mr. CARR. Since FAA is promising "early en route automation benefits" to air carriers, can we assume that the system design and requirements are not stable?

[GAO response follows:]

The "early AERA en route automation" effort is still in the development stage. The plan for AERA was to install it during the ACCC phase of AAS on AAS main-frame computers. Moving AERA forward would require a new approach wherein AERA is configured to work with the existing Host computer system. This change would require a change to the design and requirements for AERA. It remains to be seen whether such a change would affect the stability of the system design and requirements. FAA is currently studying the technical feasibility of providing early en route automation benefits to air carriers. Study results will not be available until at least early summer.

Mr. CARR. What is wrong with FAA's acquisition system that enables the centerpiece of its modernization program to be several

years into development at a cost of over \$2.5 billion without having firm, quantifiable requirements for the program?

[GAO response follows:]

When AAS was planned and started, FAA did not follow major system acquisition guidelines contained in OMB Circular A-109. The agency is now paying the price for this in its AAS program. For example, FAA had no true mission need statement for AAS and thus it cannot articulate what it wants AAS to achieve over and above current automation systems. The systems requirements statement for AAS was developed in 1981. FAA has not revalidated its AAS requirements since that time. While FAA produced detailed specifications for AAS at the time of contract award, it did not have a good picture of the top-level requirements that it wanted from AAS. As a result, the agency has had a difficult time resolving system requirements issues when they have arisen.

We are encouraged by FAA's recent administrative actions toward reforming its acquisition system. However, verbal commitments to change—such as providing substantive mission needs statements, objective reviews of alternatives, and an emphasis on purchasing off-the-shelf equipment—must now be followed by actions that demonstrate that these reforms have permeated the agency's culture.

TOTAL COSTS

Mr. CARR. Mr. Mead, your September 1992 report indicates that FAA's estimate of total AAS costs have grown from \$2.5 billion in 1983 to \$5.1 billion. Does this \$5.1 billion include all AAS costs?

[GAO response follows:]

FAA's official estimated cost for AAS is \$5.1 billion. However, recent AAS problems have caused FAA to identify a potential \$235 million in additional project costs. These additional costs are mainly due to FAA and IBM underestimating the work needed to produce ISSS and TAAS. FAA officials told us they hope to offset the \$235 million cost increase with other actions. However, they did not provide us with any specifics as to how they will accomplish this.

FISCAL YEAR 1994 REQUEST

Mr. CARR. Mr. Mead, the FAA is requesting \$455,750,000 for AAS in fiscal year 1994. From your knowledge of where the program is today, how much confidence should we have in this estimate?

[GAO response follows:]

At this time, we have not completed our review of FAA's fiscal year 1994 budget request for AAS. As a result, we cannot comment on how much confidence one should place in FAA's estimate. We will provide our findings to the Subcommittee staff by May 20, 1993.

Mr. CARR. Mr. Mead, your statement says that funding needs for the last three segments of AAS are uncertain because FAA has not yet restructured the program. Yet you point out that FAA is requesting \$169 million in fiscal year 1994 for those systems. Should we consider withholding these funds until the funding requirements are made more clear?

[GAO response follows:]

We are currently working to get details behind FAA's request for TAAS, TCCC, ACCC, and other parts of the fiscal year 1994 request for AAS. We plan to provide the results of our analysis to the Subcommittee by May 20, 1993. Given the changing nature of the AAS project, we believe that FAA should provide the Subcommittee detailed schedules and cost estimates, as well as an assessment of risks for each segment before it expects to receive fiscal year 1994 funding.

CONSOLIDATION PLAN

Mr. CARR. Mr. Mead, last year you told us the following: "You simply do not have enough money not to consolidate [FAA facili-

ties] . . . if you were to keep your current number of facilities, [you're] talking in the neighborhood of \$8 billion to \$10 billion. We just don't have the money." As you know, the FAA has now decided to consolidate very few of their facilities, claiming that consolidation would be as costly as maintaining the current structure. This is very different from what you indicated last year. What is your view of the FAA's consolidation plan and how does that proposal affect AAS costs?

[GAO response follows:]

As of yet we have not been provided with the details of FAA's analysis of consolidation alternatives. The \$8 to \$10 billion figure was an F&E estimate based on information from FAA's Area Control Facility program office. We do not know how FAA's assumptions may have changed. We plan to review FAA's consolidation plans and analyses per the request of the Subcommittee.

Mr. Carr. Dr. John, to what extent did your benefit-cost study consider the development and acquisition costs of the various AAS segments?

[Dr. John's response follows:]

AAS development and acquisition costs required to complete the program were included in our study. The development and acquisition costs and schedules were based on best estimates provided by the AAS Program Office (near the end of CY'92). The data were provided openly with reasonable values added for schedule slips of the AAS segments.

ADVANCED EN ROUTE AUTOMATION DEVELOPMENT

Mr. CARR. Since it is the advanced en route automation AERA software development which will provide most of the benefits to air carriers, it is important that we understand the costs and risks of achieving that goal in the time frame advertised. Would either of you care to comment on the status of AERA, and tell us your confidence in FAA's cost estimate for that development effort?

[GAO response follows:]

AERA is being developed by the Mitre Corporation. The system will be incorporated into AAS by IBM. There are several stages to AERA development, with each stage providing greater technical and operational challenges. Mitre is currently studying whether a technical means can be found wherein an early phase of AERA could be installed during the ISSS segment of AAS, rather than waiting until the final segment of AAS. As AERA is solely a software system being developed in a non-operational environment, it is difficult to assess the effectiveness that AERA will achieve, the status of the development effort, or FAA's cost estimate for the project. FAA's decision to study the feasibility of moving the AERA timeframe forward is a hopeful sign that early portions of the system are approaching the point where they can be tested in an operational environment.

[Dr. John's response follows:]

Our schedule places AERA implementation in the two-year period immediately following ACCC deployment. This is, perhaps, optimistic given the considerable ATC procedural changes which AERA services truly represent.

We have limited confidence in the current FAA cost estimate for AERA development. The current estimate of the development costs of AERA does not consider many transition costs which will be required. These include training, airspace restructuring, and acceptance by the controllers. When these costs are included, the benefit/cost ratio for AERA will be slightly reduced.

Mr. CARR. Mr. Mead, your statement attributes AAS problems in part to an overly ambitious plan and significant underestimation of the development challenge required. When the FAA today promises "early AERA benefits," are they falling into the same trap?

[GAO response follows:]

Despite the technical challenges posed by "early AERA" software development, we believe that the potential benefits to system users make the effort appealing. FAA needs to provide more information on the costs, schedules, and risks associated with incorporating early AERA services with the Host computer and ISSS.

MONDAY, APRIL 19, 1993.

SECOND PANEL OF WITNESSES

JOSEPH M. DEL BALZO, ACTING ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION

GERALD W. EBKER, CHAIRMAN AND CEO, FEDERAL SYSTEMS COMPANY, INTERNATIONAL BUSINESS MACHINES CORP.

INTRODUCTORY REMARKS OF SECOND PANEL

Mr. CARR. On our second panel will be Acting Administrator Del Balzo of the Federal Aviation Administration and Mr. Gerald Ebker, Chairman and CEO of the Federal Systems Company for IBM. I am constrained to observe that there are a number of FAA personnel in the audience who seem uncomfortable wearing the ties that they wore into the hearing today; however, the ties look great. But I must note that some of you don't look entirely comfortable wearing them and I rather imagine that you got up and dressed this morning with a different tie on, changed to come over here and will be slipping back into other ties when you go back to the office. Nonetheless, the attire is duly noted. Now we have to start working on IBM, it appears, and my own staff.

Well, welcome to the Committee again. We look forward to your testimony. I think in the interest of what we know, as we talked last week, Mr. Del Balzo, about the coming developments. You have approval from OMB and were able to announce those developments. We had a phone conversation earlier this morning about them, and I think it would be entirely appropriate if you would outline for us what you said at your press conference this morning.

STATEMENT OF MR. DEL BALZO

Mr. DEL BALZO. I think there are a couple of points that I would make this morning, Mr. Chairman. And with your approval, I would like a longer statement put into the record.

Mr. CARR. Without objection, it will be entered in the record.

PROGRAM DELAYS

Mr. DEL BALZO. I really think it is worth just backing up two years ago, two years ago to talk about where we were. It was at that time that we modified the IBM contract to take into account a 19-month delay, and I think you know by this time the causes for that delay, and we were fairly confident two years ago that we had a program that we could bring home successfully on time.

This past November IBM advised us that we were looking at another 14-month slippage in the program, and I believe that we acted promptly to rebaseline this contract one more time. I think this time we did something that was significantly different.

FAA CORRECTIVE ACTIONS

I think for our part in FAA we took several major steps, not just to fix the problems that we were faced with. What we tried to do this time was to fix the causes of the problems so that the same problems would not occur again two years from now, and we began by conducting a top to bottom review of the program, and here are some of the things that we found.

What we found is that we did not, we, FAA, did not exercise sufficient continuing top management focus on the program, and we found that it took us too long to respond to technical issues and problems that were raised by IBM, and we also found that we were not providing adequate top level attention to requirement changes and we also concluded that we did not have enough top level involvement from the operational side of FAA. So we did a couple of things.

We began by restructuring the management to the program to provide program support and oversight at the top. We have done that. We have a program director that now reports directly to the Administrator. And we empowered this program director to make decisions affecting requirements. We did not empower the program director to make decisions that would impact on either schedules or costs. We have a program director that is accountable now for cost containment and adherence to a schedule.

We have an acquisition review board that is chaired by the Administrator that reviews this program every two weeks, and we have established program managers for each of the individual segments of the program. The ISSS managers have already been named, are in place. We have located the ISSS program manager on site at the IBM plant with his counterparts from both air traffic and airway facilities, the operational side of FAA, with the contracting specialist and two union representatives for the first time as part of our management team, the union representative from PASS and a union representative from NATCA.

And we have empowered this team to resolve issues as they arise, real time, eliminate decision-making delays. And what we have done is we fixed the requirements for ISSS from the nice-to-haves to the need-to-haves.

On April 1st we froze user requirements, and I have to stress that freezing a requirement does not mean there won't be any more changes to the system. There will be changes to the system. We are still 30 months away from delivery to Seattle. There will be additional changes based on our experience and the results of operational testing.

We are committed to maintaining close control over any change that happens in this system from now on, and I am confident now that we will have ISSS acceptance at the technical center by September of 1994. I remain confident that we will deliver to Seattle in April of 1995 and we will be operational in October of 1996.

FIRST MAJOR SYSTEM PERFORMANCE CHECK POINT

One of the management corrections that we made entails the establishment of a more detailed and closely spaced series of check points so that we know all along the way whether or not we are

making schedules good. It was about six weeks ago that we publicly announced our goal to achieve a first major system performance checkpoint and that would involve the continuous operation of 28 consoles for a six-hour period, and we said that we would do that on April 19th.

As I told you this morning, we managed to achieve that one week early and we exceeded the performance expectations, and what that says is the confidence that we had six weeks ago is even higher today.

I think we perform extremely well under pressure. I am not sure we would have made that day if we didn't advertise it in advance. So I would advertise today our second major milestone, checkpoint two, 36 consoles to be operating for 13 hours. We say we will do that on or before June 28th. I believe that we have addressed the problems associated with the controller work station, and I have them in hand.

Let me talk a little bit about the rest of the AAS program that was talked about earlier by GAO.

AAS FOR TERMINAL AUTOMATION (TAAS)

The terminal part of the program, we call it TAAS, will introduce the same controller work stations for the TRACON controllers along with computer hardware and software into the terminal environment. TAAS is the fundamental building block for terminal air traffic control automation. It will be the automation system for our metroplex control facilities, the major consolidated facilities. It will give us the platform upon which we can build terminal automation functional capabilities that we cannot get into the existing systems today.

We can introduce some terminal automation functionalities into about four or five locations because the computer capacity is there. We can do it at Denver. We can do it at Dallas-Fort Worth. We can do it in New York. We cannot do it in any of our other locations without TAAS. We are committing to test delivery, the first site, by September of 1996, to be operational by October of 1997.

AUTOMATED EN ROUTE AIR TRAFFIC CONTROL (AERA)

You have heard a lot this morning about the functional capability called AERA. It is the automated en route air traffic control function, and you have heard a suggestion about what AERA will or will not do in terms of providing user benefits.

We have got to find a way to speed up the introduction of AERA functional capabilities, because without the introduction of AERA and what AERA does, there will be no significant user benefits. There will be no reductions in flight time, no fuel savings, no more efficient management of the air space than we are able to achieve today without AERA.

Not too long ago, the Center for Advanced Aviation Systems Development operated first by Mitre had a significant development effort under way to evaluate the capabilities of AERA. I think the time has now come to bring that program on line as quickly as we can. It is a high priority for us and for the users. In fact, it was just recently that I met with aviation industry representatives to bring

them up to date on where we are with AAS, the management steps we have taken to keep the program on track, and our strategy for fielding ISSS in Seattle in 1996. I think you know that it is fair to say that industry users recognize the importance of moving forward with AERA. They support us doing so. In particular, they believe very strongly that we really need to find a way to bring on line the functional capability of AERA because they recognize that AERA will provide the most direct benefits to them. We are attempting to do just that.

And we can debate, as you started debating this morning, about how much that capability is worth. What you heard from the Transportation Systems Center this morning was that they have estimated user benefits from AERA to be on the order of \$15 billion over a 20-year period. It wasn't too long ago that a similar analysis was done by Mitre. Mitre's estimates was on the order of \$4 point some odd billion dollars, just in fuel savings and shorter trip times, having nothing to do with passenger time, just in direct pay back to the users of the air space.

And I am not sure what the right number is. I think the point is, we don't really know exactly what the right number is. \$175 billion is not something to sneeze at given the investment that it would take. I think what we do need is a better understanding and I think you only get that better understanding by having the capability to do a hands-on evaluation. We need to have something in place that we can evaluate. I think the investment that we propose making in fiscal year 1994 will give us a better understanding of what it is that AERA will or won't do in the real world.

AREA CONTROL COMPUTER COMPLEX

When you move on to another segment, and that is the area control computer complex, that is the computer that replaces the existing host computer. We have completed the critical design review. We have begun the software work on the most challenging portion of the system. The goal is to make processing of direct routes the rule rather than the exception so we can provide more flexible routing services to our users.

And if we are going to introduce AERA throughout the system, it has got to be done on a new computer backbone. We cannot do it with our existing automation capability.

As part of the continuing evaluation of the program, we have looked at what we plan to do in the towers. I disagree with what I heard this morning. We do know what we want to do and we are prepared to do it. We have made more progress in the tower program than we have in probably most of the other work that we have undertaken over the past couple of years.

We have broken that program down into three discrete segments, the Type 3, that is the fundamental building block that will go into air traffic control towers to replace the existing analog instrumentation. It will make space available for additional tower enhancements because we are consolidating a lot of information that is scattered. It can and will be implemented independently of either TAAS or all of the other segments in the program.

It is a low cost approach to providing an incremental upgrade to tower automation capabilities sooner than we would have had. So what we propose in fiscal year 1994 is to complete the Type 1, Type 2 design, complete development, and actually start testing of the lower cost Type 3 design.

FISCAL YEAR 1994 PLANNED ACTIONS

During this coming fiscal year, development of ISSS software to conduct operational test and evaluation at the FAA Technical Center will be completed. It will be delivered to the Technical Center. TAAS, terminal automation software coding and integration, needs to continue. The ACCC efforts to replace the host computer and the aging software has to resume in 1994. We are not doing anything now. We didn't have enough money.

Once these three systems are fielded, air traffic controllers, technicians, will have more reliable and maintainable systems, and then finally, requirements for initial AERA and the second ACCC AERA software package will be frozen in 1994 so that we can begin design and development in fiscal 1995.

LIMITED CONSOLIDATION

I am happy to report today, as I mentioned this morning, that after long analysis and review, we finally reached agreement on a strategy for facility consolidation. It is a significant issue, as you know, that has been hanging around our neck now for over 10 years. When AAS was conceived in the early 1980s, we believed then that we had to design AAS to concentrate air traffic control in 23 facilities.

And the fact is, we couldn't operate out of 23 facilities. We couldn't afford the risk and the system vulnerability. We could not operate out of 23 facilities. More recently we have grown concerned that the proposed number of air traffic control facilities was much too small. What happened to us is that technology changed. Technology changes today allow us to achieve operational benefits regardless of the number of automated facilities.

When we recognize that 23 was operationally unacceptable, we were asked, what is the minimum number of operationally acceptable facilities. And we concluded then that the answer then was probably on the order of 53. It wasn't until recently that we asked ourselves the right question. I mean, what is the right number of facilities. The right question is not what is the minimum number; what is the right number. When we asked ourselves that question, we concluded that the right answer was what we will call limited consolidation. Limited consolidation says, consolidate only where it makes operational sense. That is the recommendation that we come forward with today. An administration decision that says we would like to put the consolidation issue behind us. We cannot operate a system with 23 facilities, it is unworkable.

Our existing centers will remain en route air traffic control centers. We will not attempt to consolidate both the en route and terminal functions into one location. We will have a limited number of metroplex control facilities of which five are already funded. Most of our existing TRACONs will be modernized with new equip-

ment and some will be consolidated where a required facility reconstruction might result in some economies of scale.

There are a number of TRACONs that have to be rebuilt, and located in new buildings. What we propose to do is for each one that requires a new building is to see whether or not there are economies of scale in which it would make sense to relocate some additional facilities and put them in the same location. We don't have an answer to that yet.

What we need to do is develop the right, what you would call investment criteria, that we can actually evaluate what it is that would make sense beyond the existing five major consolidated facilities, and we would be more than happy to involve this committee, GAO, anyone who has an interest in working with us as we proceed. We owe you a report that you have been asking for for a number of years. We commit to having that report in your hands in 30 days.

The cost of limited consolidation was factored into our fiscal year 1994 budget and we believe that it can be accommodated within our existing out-year projections. AAS restructuring is based upon a shift, a major shift from a one-step transition to a flexible system architecture. What that says is we will have the flexibility to do what makes sense in terms of upgrading and modernization as we go.

If I were to make some comments just in closing, I would point out that I believe that the major technical issues are known, they are manageable. That does not mean that there will not be issues that arise tomorrow. With the kind of program that we are embarking on, there will always be technical and operational issues that we will be dealing with real time. I think we are up to the challenge. We see no major show stoppers.

TRW AUDIT

About six weeks ago, we commissioned an independent audit. We commissioned TRW to get the best automation people that they could get their hands on to either confirm or tell us that we are wrong regarding where we are, the health of the program, and future risks. I would share with you the results that we will be getting from TRW.

I will tell you today they see no technical show stoppers. They think the schedule is aggressive. They are concerned that there may be some additional schedule slippages if we don't pay attention and if we don't remain committed. But there are no major show stoppers. So I am confident that ISSS is back on track. A limited consolidation decision is now behind us and that means that we can now move out confidently on TAAS and ACCC. Both of those programs now need to be adjusted to accommodate and get in synch with limited consolidation decision.

And finally, I think we must speed up AERA. TCCC is ready to proceed for early implementation. What we are proposing in the fiscal year 1994 budget is enough money to keep all programs moving matched to what I think needs to be done, making no hardware commitments beyond ISSS and TAAS for the major TRACONs. There is engineering work that has to be done, analyses

that have to be done, experiments that have to be done, and the software code that has to be written.

We are not now doing anything in terms of production hardware on any of those programs. It is important to keep moving forward.

Thank you.

[The prepared statement of Mr. Del Balzo follows:]

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STATEMENT OF JOSEPH M. DEL BALZO, ACTING ADMINISTRATOR OF THE
FEDERAL AVIATION ADMINISTRATION, BEFORE THE HOUSE COMMITTEE ON
APPROPRIATIONS, SUBCOMMITTEE ON TRANSPORTATION, CONCERNING THE
ADVANCED AUTOMATION SYSTEM. APRIL 19, 1993.

Mr. Chairman and Members of the Subcommittee:

I am pleased to appear before you today to discuss the status of
the FAA's Advanced Automation System program, which we refer to as
the "AAS" program.

The AAS program is the cornerstone of the FAA's Capital Investment
Plan, which represents a variety of technological efforts to
modernize our air traffic control system. Awarded in 1988, the
AAS was at that time the largest automation contract ever in the
civil sector. AAS will provide the capacity to handle projected
air traffic load well into the 21st century. It offers increased
productivity and safety benefits, increased reliability, and the
adaptability to take advantage of new capabilities offered by
satellite technology.

The President's budget for Fiscal Year 1994 recognizes the
importance of the AAS program to our Nation's air transportation
system, and seeks the necessary funding to maintain its momentum.
The Facilities and Equipment budget request for AAS is \$455.7
million. The requested amount is comprised of \$424,650,000 to
continue development of all segments of the AAS program and
\$31,100,000 to prepare the Air Route Traffic Control Centers for

installation of AAS equipment. Twenty five million dollars is requested separately as part of the President's investment package.

There are five segments to the AAS program. The first element is the Peripheral Adapter Module Replace Item (PAMRI). PAMRI provides increased data communication capability, and supports an increased number of radars at our air traffic centers, while providing the needed redundancy to support transition to the second phase of the AAS program--the Initial Sector Suite System (ISSS).

The ISSS component will introduce new air traffic control work stations into our air traffic facilities that control en route flight. It will rely principally on the automation capacity afforded by our earlier acquisition and installation of improved main frame computers in all of our air traffic centers. These "Host" computers have performed extremely well since their completion in 1988.

Each work station or "sector suite" will consolidate controller functions now performed at several scopes or workplaces into one suite. Improved data portrayal will be available to our controllers through much enhanced displays that offer higher resolution, color, and better depicted weather information. Electronic flight data, in lieu of handwritten paper strips, will also be available. The sector suite configuration, along with

communications improvements, will enable us to simply and speedily reconfigure airspace within an air traffic center to respond to staffing or workload requirements. It also enables a supervisor to monitor on one screen air traffic activity at any control station under that supervisor's authority. Today, a supervisor must walk around the control room in order to observe air traffic activity.

The ISSS portion of the AAS program provides the needed platform for the subsequent achievement of a variety of user benefits that are offered by other elements of the AAS program. Remaining elements of the overall AAS program include: TAAS--Terminal Advanced Automation System--new equipment and software for the terminal operational environment; TCCC--Tower Control Computer Complex--new software and selected hardware upgrade for airport control tower operations; ACCC--Advanced Computer Complex--new software and selected hardware upgrade for en route air traffic operations; and AERA--Automated En-Route Air Traffic Control to facilitate fuel savings and other efficiencies in the en route air traffic environment.

When AAS is completed, computers will perform many existing controller functions that can be done more efficiently and precisely by automation, freeing controllers to perform functions that humans can do better, such as resolving conflict resolution and flight planning. For example, the AERA portion of the AAS will evaluate radar data to combine aircraft locations, altitudes,

and velocities along with wind speed predictions. Looking ahead as much as 20 minutes into the future, it will scan for potential conflicts with other aircraft, highlighting in bright red the potential collision course on the controller's display. AERA will then rank potential course corrections for the controller who will decide what action to take. This will help tremendously in assigning aircraft more direct and fuel efficient routes, saving time and money.

Our success in the overall AAS program to date has been mixed. PAMRI is a real success story, with the final system implemented in February, well ahead of schedule. And our controller and technician user teams and the creation of the Development Demonstration Facility have been invaluable in helping to assure that fielded products will be usable, acceptable, and appropriate to the task. But we have experienced problems with ISSS, as I will describe.

About 2 years ago, FAA and IBM modified the AAS contract, which resulted in a 19-month delay for ISSS. Five months of the delay were due to FAA changes in requirements and the remaining 14 months resulted from software development difficulties encountered by IBM. This past November, IBM advised us that it would experience an additional 14 month slippage in the program due to significant software development and testing problems.

Following that notice, we acted promptly to insist upon a proposed

plan from IBM to cure this problem, to set course corrections, and firm up a schedule. IBM responded with an initial proposed cure plan. A senior-level FAA team was appointed to work directly with IBM officials to see that this plan was strengthened to meet our requirements. IBM subsequently provided us with its final cure plan, which underwent technical review within FAA. Both IBM and FAA are working to the plan, and are taking the steps necessary to include the plan as part of the contract.

For our part, within the FAA, we have taken several major steps to change the way we previously have done business with the AAS program. First, we conducted a top to bottom review of the program. Our review of the problems encountered with the program indicates to us that we previously did not exercise sufficient, continuing top-management focus on the program; that we have generally taken far too long to respond to technical issues or problems raised by IBM; and that we were not providing adequate top-level attention to requirements changes in the program. The recent changes we have now instituted address all these issues.

We have restructured our management of the AAS program to provide program support and oversight at the top. A program director for the overall AAS program now reports directly to the Administrator. The program director is empowered to make decisions on issues affecting requirements, except where schedule or cost of the program will be affected by a requirements change. That authority is reserved to the Administrator. The program director is

accountable for cost containment and keeping the program on schedule.

The FAA's Acquisition Review Council, chaired by the Administrator, reviews the status of the AAS program at least every two weeks, and more often if necessary. We also are establishing separate program managers for the different segments of the AAS program. We have already selected the program manager for the ISSS segment. The segment program managers will report directly to the AAS program director, who will have responsibility for overall direction and program coordination.

We established a dedicated ISSS team on site at IBM. The team is led by the ISSS Program Manager and includes representatives from our air traffic and airways facilities organizations, as well as a contracting specialist. This team is fully empowered to resolve issues as they arise, eliminating the decision-making delays of the past where it simply took too long for us to come to grips with technical problems. The other segment program managers will exercise the same authority.

Another key step we have taken is to freeze the requirements for ISSS. We need to assure that we have everything our controllers need under this program, but we recognized that we also needed to provide a steadier target for IBM to work toward. It is important to separate the "nice to haves" from the "need to haves," and we have acted to do that by establishing an operational suitability

action team. On April 1, we froze the user requirements for ISSS. I want to stress that this freezing of requirements does not mean that there will be no additional changes to the system. Based on prior experience, I am sure that operational testing of ISSS will highlight some aspects of the system that need tweaking or changing before full-scale deployment can begin. Even these changes will have to be justified in terms of the cost or schedule penalty they may create. We are committed to maintaining much closer control over any requirements changes than was the case before and I am confident that we will have ISSS acceptance at the FAA Technical Center by September 1994.

One of the management corrections we have made with the AAS program entails the establishment of a more detailed and closely spaced series of checkpoints to help us watch more closely the progress we are making with ISSS. System Checkpoint #1 is one of the checkpoints established for this purpose. It involves the continuous operation of 28 common consoles for a 6 hour period. The testing associated with this checkpoint demonstrates the stability, performance, and user functionality elements of ISSS. I am pleased to report that we successfully completed the series of tests under System Checkpoint #1 ahead of schedule. We are now working on a series of follow-up checkpoints of increasing difficulty, and we have begun testing under System Checkpoint #2 ahead of schedule.

So far, I have discussed our success with PAMRI and what we have

done to address problems with the ISSS segment of AAS. I would like to briefly touch on the status of the rest of the AAS program. The terminal AAS or TAAS will introduce the same new controller workstations for TRACON controllers along with new computer hardware and software into the terminal operational environment. TAAS is the fundamental AAS building block for terminal air traffic control automation. It provides the approach and departure control functionality to replace aging ARTS equipment. It will be the automation system for our Metroplex Control Facilities, and provides a sound and scalable hardware and software architecture, which can be sized to meet current needs and can be expanded to add terminal area automation enhancements. Most importantly, it will provide the computer architecture for implementation of the Terminal Air Traffic Control Automation system in our major TRACONS. TATCA will increase the efficiency of handling terminal traffic by providing top-of-descent, approach spacing, and sequencing aids to air traffic controllers, offering additional economic benefits to system users.

With respect to AERA, we are currently reviewing what actions we need to take to make AERA available as soon as possible after completion of ISSS. The Center for Advanced Aviation Systems Development operated for us by MITRE is assisting us with this effort. AERA, as I mentioned earlier, offers significant benefits to the user community. Therefore, we plan to bring it on line at an earlier phase of the program than was first conceived. This is a high priority with us, as it is with industry groups.

In fact, I should add that we have met recently with aviation industry representatives to bring them up to date on where we are with AAS, the management steps we have now taken to keep this program on track, and our strategy for fielding ISSS in Seattle in 1996. In general, I believe it is fair to say that industry users recognize the importance of pressing forward with the AAS program, and they support doing so. In particular, they have expressed to me the need to bring on line at the earliest time those elements of the program, such as AERA, that will provide the most direct benefits to them, and we are attempting to do just that. They have also indicated their general satisfaction with the kinds of management corrections we have made, but have expressed concern that we remain vigilant in our monitoring of the AAS program.

The Area Control Computer Complex is the segment, which, in its first phase, replaces the existing Host computer and the 1970's vintage software for en route air traffic control. We have completed the critical design review conference, and begun software work on the most challenging portion of the system--flight data processing. The goal is to make processing of direct routes the rule rather than the exception, providing more flexible routing services to our users.

As part of our continuing evaluation of the AAS program, we have decided to break the Tower Control Computer Complex, or TCCC, portion of the program into smaller steps. The first step, known

as TCCC Type 3, is a fundamental building block that will go into Air Traffic Control Towers to replace existing analog instrumentation, such as the barometer and Runway Visual Range instrument, with modern displays to ease the controller's reading of these parameters. It will also make space available for additional tower cab enhancements. TCCC Type 3 can be implemented independently of TAAS and other AAS segments, and is a low-cost approach to providing an incremental upgrade to tower automation capability sooner than the previous TCCC program plan.

During this coming fiscal year, development of the ISSS software to conduct operational test and evaluation at the FAA Technical Center will be completed and delivered to the Technical Center. TAAS software coding and integration will continue. ACCC efforts to replace the Host computer and its aging software will resume in 1994. Once these three systems are fielded, air traffic controllers and maintenance technicians will have more reliable and maintainable systems. Requirements for the initial AERA services and the second ACCC/AERA software package will be frozen during FY 1994, and design and development of the software will begin. Other activities, designed to support the ISSS schedule as modified earlier this year, will be underway.

I am happy to report today that after long analysis and review, we have reached agreement on a strategy for facility consolidation. When AAS was conceived in the early 1980's, we believed that in order to make full use of AAS it was necessary to

concentrate air traffic control in 23 facilities. More recently, we have grown concerned that this proposed number of air traffic facilities was too small, and that impacts on the national system could be too great from any unplanned interruption in air traffic service from a particular facility. Since AAS design development and advances in computer technology make it possible today to achieve operational benefits regardless of the number of automated facilities, we have reexamined our original consolidation plan.

With Secretary Peña's personal involvement, we have now agreed within the Administration on a fundamental change to our earlier consolidation plan. Taking advantage of today's technology, we will consolidate only where it is justified either operationally or economically.

In other words, our existing Centers will remain en route centers. We will have a limited number of metroplex control facilities of which 5 are already funded. Most of our existing TRACON's will be modernized with new equipment. Some TRACON's will be consolidated where required facility reconstruction results in economies of scale by incorporating nearby facilities that would otherwise have to be modernized. We are defining

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evaluation criteria and refining the methodology used to determine future consolidation. We would be happy to involve you as we proceed. We will have a report to Congress shortly.

AAS restructuring is based upon a shift from a "one-step" transition to a flexible system architecture. A flexible architecture approach permits a gradual introduction of new technology as soon as it becomes available. Additionally, unlike full consolidation, limited consolidation does not require an immediate determination of the final number of consolidated facilities but rather, permits the review and justification process to proceed over a period of time.

In closing, Mr. Chairman, I would like to emphasize the importance we place on the AAS program, and the need for its timely completion. AAS is an investment in our air transportation infrastructure that is needed to take the aviation industry into the 21st century. The steps we have taken reflect our commitment at the top to provide a much improved foundation for managing the program in a way that will keep it on budget and on schedule. I assure you that we will not relent in these efforts.

That completes my prepared statement. I would be pleased to respond to questions you may have at this time.

STATEMENT OF GERALD EBKER

Mr. CARR. Thank you. Mr. Ebker, your statement will be inserted in the record. We ask that you summarize it in the interest of time.

Mr. EBKER. I will summarize my comments then. Mr. Chairman, I am pleased to have this opportunity to present my perspective on the AAS program. I acknowledge the thoughtful guidance that has come from this committee through the years. Certainly your own personal participation in aviation provides an unusual degree of understanding of the AAS system and the complexities involved.

Having myself been personally involved in the development of control systems for space, for oil refineries, for submarines and now air traffic, I can assure you the AAS system is an ambitious undertaking. The AAS system has a requirement to meet seven-ninths of availability. That means it must be up and operational for all but about three seconds a year. This is the most demanding requirement ever placed on a real-time system.

As a result, the system has hardware fault detection and isolation and recovery. It also has software fault detection and recovery. These mechanisms have been designed by recognized leaders in industry and academia. It is our belief that these fault tolerance mechanisms can be made available to future applications through straightforward interfaces, thus simplifying the addition of new functions in stand-alone processors.

It should also be noted that the software has been designed to optimize reuse and it is our estimate that over 50 percent of the code in segments downstream from ISSS will reuse existing code. This should provide both reduced schedule risk and lower developing costs. Now, despite the flexibilities of the AAS systems, we have not performed as well as we should have. As the AAS system's prime contractor, we should have kept the FAA apprised of the effect of changed requirements, on the risk to the published schedules, on the exposures to the budget guidelines. We did not do that.

In addition, even our own stringent procedures for software development were violated. However, although we are all disappointed that the system has not completed FSQT, the time has not been wasted. The most complex system in history has been specified and designed. Over 1 million lines of code have been developed with less than 75,000 still to go, and most of that code is integrated as demonstrated by functional checkpoint number one.

Since the fall of last year, we have taken dramatic action. The management team has been changed, including my becoming the full-time AAS program manager. A requirement in code audit was performed to revalidate the technical baseline of the program. The system's services subsystem was audited and the resulting recommendations have been implemented. The configuration management process has been reviewed and some changes have been made.

These internal changes, coupled with the FAA changes Mr. Del Balzo has described, and the increased communications resulting from the FAA, ISSS team being resident at Rockville, are already showing results, the completion of functional checkpoint number one a full 10 days early, and I might add that since then, over the

weekend, we have supplemented—as you know, checkpoint number one was 28 consoles for six hours. Over the weekend we ran 48 consoles for 12 hours.

So we are making dramatic improvements and that improves our level of confidence. Now, despite all the actions we have taken, we know there are still some risks in the program. For example, in architecture. Although the best technical minds assure us that the fault tolerant architecture will work and our models show that it will work, I will still be uneasy until we have a 200 console system operating in the lab.

And although it is not a formal commitment, it is my intention to reach this plateau by September of this year. Also it is imperative that we contain ISSS development to the band widths that have been allocated and that all other new requirements be eliminated. It is also recognized that the FAA has major challenges in site roll out, in user training, and in user system acceptance.

Now, let me conclude my remarks by outlining my recommendations for AAS activity. First of all, continued development and eventual deployment of ISSS, the baseline en route control system. In parallel, do the necessary analysis to determine the feasibility of accelerating user benefits such as digital data link and flow control. Use this analysis to develop a long range implementation plan that will optimize development of ISSS.

Second of all, continue development and eventual deployment of the AAS, the baseline terminal control system. In parallel, do the necessary analysis for limited consolidation in user benefits in the terminal area. Use this analysis to develop a long range implementation plan that will optimize development of a TAAS.

And third, continue development and eventual deployment of a Type 3 tower. In parallel, lay out an incremental development plan that will phase in the necessary additional capabilities for Type 1 and Type 2 towers. While this may seem like a lot of activity, keep in mind that while IBM will be responsible for the majority of software development and testing on ISSS, on TAAS, the Computer Sciences Corporation will do most of the development and Paramax will do most of the testing. On the tower, Paramax will do most of the development.

As for the recommended analysis and planning, this will be led by the FAA with major roles by Mitre and TRW. I have personally met with the executives of each of these companies and can assure you they are committed and confident that they can produce the system our country needs—our country needs. That concludes my remarks.

[The information follows:]

[The prepared statement of Mr. Ebker follows:]

STATEMENT
OF
GERALD W. EBKER
IBM VICE PRESIDENT
CHAIRMAN AND CHIEF EXECUTIVE OFFICER
OF IBM's FEDERAL SYSTEMS COMPANY

BEFORE THE SUBCOMMITTEE ON TRANSPORTATION AND RELATED AGENCIES
HOUSE APPROPRIATIONS COMMITTEE

APRIL 19, 1993

Introduction

Thank you, Mr. Chairman. First I would like to congratulate you on your new position as subcommittee chairman and Mr. Wolf as ranking member.

I appear before you today in several capacities. As a Vice President of IBM, I serve as chairman and chief executive officer of the Federal Systems Company, an IBM company dedicated to serving the unique needs of government customers. I am also Project Manager of the FAA's Advanced Automation System (AAS). The last title is unusual in conjunction with the other positions, but it reflects my personal as well as IBM's corporate commitment to the success of this important program. I assumed the role last December when I decided that it was necessary to become personally involved in assuring that AAS meets its technical, schedule and cost milestones.

As you know, IBM's Federal Systems Company (FSC) is the prime contractor for the development of the FAA's Advanced Automation System. Including our major team members, Computer Sciences Corporation (CSC), Raytheon and Sony of America (SONAM), the IBM team consists of forty companies representing a workforce of almost 2,500 people in 11 states. Most of those employees work at IBM's facilities in Rockville, Maryland, and English Creek, New Jersey.

IBM's commitment to Air Traffic Control and AAS

IBM's Federal Systems Company has a history of commitment to air traffic control automation in this country. FSC was involved in the development of the NAS Enroute Stage A program in the late '60s and early '70s. Parts of that system are still in use today.

In the late '80s IBM completed the re-hosting of the software in that system to more modern computers as a major step in the FAA's overall Capital Investment Plan (CIP). The reliability of that system - known as the Host Computer System - has far exceeded what the FAA required.

Advanced Automation System (AAS)

As you know, today's air traffic control system consists largely of three separate systems or types of facilities. The Tower facilities handle take-offs, landings and ground support at airports. The Terminal Radar Approach Control facilities, or TRACONS, control approaches and departures within a 30-mile radius around the airports. Finally, the Air Route Traffic Control Centers (ARTCCs) divide the airspace across the country for enroute control of flights. (Exhibit A)

The Advanced Automation System was designed as the replacement system that would integrate and support all of these functions in one comprehensive system of the future. This is an important point, because as we talk about various segments that make up AAS, it should be realized that those segments were conceived as an implementation approach or a means of transitioning to the full system. (Exhibit B)

The architecture of AAS was specified by the FAA. It is a highly extensible architecture that will support growth well into the 21st century. By adding or removing processors, the system is scalable from the largest control facility down to the smallest approach control facility. This distributed architecture is being recognized around the world as the standard of air traffic control systems of the future.

AAS has been designed to meet stringent performance and availability requirements. For certain critical functions, the system can be down for no more than three seconds per year. AAS breaks new ground in moving toward high-availability systems that must run continuously. In addition, the FAA based the AAS architecture on commercial products and industry standards (like Open Systems Interconnection Protocols), in order for it to support technology upgrades well into the future.

The Advanced Automation System has five interrelated components or segments: The Peripheral Adapter Module Replacement Item (PAMRI), the Initial Sector Suite System (ISSS), the Terminal Advanced Automation System (TAAS), the Tower Control Computer Complex (TCCC) and the Area Control Computer Complex (ACCC).

Peripheral Adapter Module Replacement Item (PAMRI)

The PAMRI segment doubles the number of interfacility communication channels to 50 in Air Route Traffic Control Centers (ARTCCs) and also increases the number of radars that can be accommodated by the Host system to 25. All 20 PAMRI systems were delivered and accepted on or ahead of the schedule established in 1988. All 20 centers are now operational, and the system is exceeding both availability and reliability requirements. There have been no major problems with PAMRI requirements or implementation.

Initial Sector Suite System (ISSS)

The Initial Sector Suite System (ISSS) is the next major step in the FAA's Capital Investment Plan transition. ISSS continues to use the Host system for the fundamental air traffic control functions, but introduces a totally new work environment for the controller. (Exhibit C) The new workstation includes ergonomically designed equipment, state-of-the-art raster display technology, and a digitized auxiliary display for controller charts, maps and other key information. Combined with the Voice Switching and Control System (VSCS), ISSS will provide the flexibility to reconfigure facilities to more readily meet the airspace user requirements for air traffic services.

Equally important, but not visible to the controllers or the users, ISSS provides the commercial hardware and operating system, real-time system services, networking capabilities and an advanced availability management structure that will be the platform for future segments and future applications. (Exhibit D)

Part of ISSS includes the Support System Computer Complex (SSCC) at the FAA's Technical Center (FAATC). It consists of a large typical Job Shop system that supports programmers in developing and maintaining field-deployed systems. This configuration includes a pool of switch-configurable common consoles, gateways, Local Communications Networks (LCNs), Tower Position Consoles, etc., equipped to replicate the larger of any two field-deployed systems of any type. This equipment will be used for system test and problem determination at the FAATC. Simulation drivers and test tools are provided, as well as capabilities to manage and control multiple releases of the field-deployed systems. Except for the Job Shop hardware/software and the special FAATC unique switches and simulators, the SSCC contains the same components as the field-deployed system.

The Support System Computer Complex for ISSS has been delivered and installed at the FAATC along with the ISSS support software. The support software (approx. 500 thousand lines of code) just recently passed the FAA's initial formal testing. I will say more about ISSS later in my testimony.

Terminal Advanced Automation System (TAAS)

The Terminal Advanced Automation System (TAAS) will modernize the existing Terminal Radar Approach Control (TRACON) capabilities for approach and departure control. TAAS was originally architected to support full consolidation of terminal facilities into the ARTCCs and certainly will satisfy those requirements; however, the architecture is flexible enough that it also can be scaled down to allow for terminal air traffic control at non-consolidated or stand-alone approach control facilities. The TAAS segment also benefits significantly from ISSS; 68% of the TAAS software is reused or carried forward from ISSS.

In 1988, Congress required the FAA to include contract options in AAS that would support many consolidation alternatives. As a result, the AAS contract includes Area Control Facilities (ACFs), ACF Bs (which are similar to Metro-plex control facilities (MCFs) today), TAAS, and Tower/Remote TRACONs, which could support non-consolidated terminals. AAS provides the contractual vehicle to support alternatives to full consolidation with previously and competitively negotiated options. TAAS is the system configuration that the DOD is particularly interested in using for its military approach control facilities.

The design and development of both hardware and new functional software for TAAS are basically on schedule. However, the current delay in ISSS software, will impact completion of TAAS factory tests by about seven months. On February 26, 1993, IBM successfully completed the major TAAS milestone called Surveillance Thread Demonstration 2 (STD 2), on schedule. The system was configured for a single terminal, multi-sensor, multi-sector air traffic control operation. Surveillance reports from 2 sensors, including target and weather reports were injected into the system. Five common consoles were configured into three sector suites; the scenario consisted of 1000 aircraft and recorded live weather data from an ASR-9 sensor in Huntsville, Alabama. STD 1, completed ahead of schedule in July 1992, had already demonstrated the capability to process recorded live target data from an ARSR-8 sensor in Los Angeles. We continue to be pleased with the progress of TAAS development.

Tower Control Computer Complex (TCCC)

The TCCC design is perhaps the most innovative of all the AAS segments, since the Tower facilities today have very little automation. A joint FAA/IBM task force conceived the use of voice recognition, and touch screen technology, to support the automation of flight data communications in the tower.

The TCCC will interface not only with TAAS, but, also with the Pre-Departure Clearance (PDC) and the Terminal Doppler Weather Radar (TDWR) systems.

Full TCCC development was curtailed by FY93 funding limitations. IBM was directed to proceed only with development of a "Type 3" capability. This will provide limited flight data handling, full status and control of airport equipment, and interface to the Pre-Departure Clearance system, Digital Automatic Terminal Information Service (ATIS) and Information Distribution System (IDS).

IBM strongly supports funding for the completion of the Type 3 capability so that this can be fielded as soon as possible.

Area Control Computer Complex (ACCC)

The ACCC segment will complete the replacement of today's Host system. It will assist the controller with tactical conflict resolution and provide automated and continuous flight plan conflict detection -- often referred to as a "20-minute look ahead". ACCC will introduce many additional functions of interest to the airlines and other users, such as arrival and departure metering, and the use of real-time wind, temperature and atmospheric pressure for an improved flight planning process. Technological advances will support capabilities beyond anything now available. For example, alternative routes will be generated to avoid future conflicts, in which the route generation algorithms factor in the cost of extra time, distance and fuel for the aircraft -- all important considerations to the aviation industry.

The Critical Design Review for ACCC was completed in 1992 as planned. It should be noted that fully 73% of the ACCC software will be reused or carried forward from the ISSS and TAAS segments.

FY93 funding constraints forced curtailment of all but a small part of ACCC development and stopped work on AERA (Automated Enroute Air Traffic Control). Since AERA functions benefit the airlines, it is hoped that FY94 funding will be sufficient to resume the design of Introductory AERA Services (IAS), so that these functions can be implemented as soon as possible.

ISSS schedule problems

Since the protest resolution and the final award of the contract to IBM in November 1988, ISSS has had two schedule delays. In December 1990, a negotiated contract modification delayed the program schedule 19 months. This delay resulted both from the addition of new requirements by the FAA, and the difficulty of IBM in completing the derived requirements and developing the software.

The second delay occurred at a point in the program when the bulk of the ISSS software was being tested. Over 1.1 million lines of code have been developed for ISSS. In 1992, IBM expected to be testing a stabilized system. Instead, we allowed fully 150,000 lines of the 600,000 lines of operational software to change. In direct response to the FAA's Cure Notice, IBM conducted an intense analysis of the problems that caused the delay in ISSS acceptance.

A detailed assessment of the software builds in both 1991 and 1992 showed that a significant portion of the software introduced in these increments resulted from changes to elaborated requirements. Although the FAA's System Level Specification (SLS) changed very little, the interpreted and derived requirements changed markedly.

Many of the requirements resulted from joint FAA/IBM work to refine the common console computer-human interface, particularly for the air traffic controller positions. There have been a number of action teams, with joint FAA and IBM participation, whose charter was to review the operational suitability of various parts of the system. For a system with high safety requirements and a large and diverse set of operational users, achieving consensus was often difficult and time-consuming. Absorbing the action teams' recommendations into the ISSS baseline consumed a significant portion of IBM's engineering and management resources and delayed the completion of software development and integration.

As schedules for completion of requirements and engineering design were missed, pressure on improving schedules in software development and systems integration became intense. In this pressure-cooker environment, well-intentioned people compounded the problem by not fully complying with the rigorous software development process of FSC. This then contributed to the difficulties encountered as the System was integrated in the fall of 1992.

A number of steps have been taken since the beginning of 1993 including:

New managers have been placed in a number of key positions including my own role as AAS Program Manager.

Communications between IBM and the FAA have increased dramatically and half-day sessions are held weekly on each of the major segments.

An audit has been conducted of the requirements and the written code and the technical direction has been rebaselined.

An audit has been conducted on the system services software and steps have been taken to mitigate risks in this critical layer of system software.

In addition, steps have been taken by the FAA to elevate the AAS program within the agency, to periodically review the AAS program in the Acquisition Review Council, and to place an on-site team at the IBM facilities to quickly resolve the day-to-day issues.

These steps are already showing improved results.

The FAA Technical Center acceptance milestone has been re-planned with the FAA and is now scheduled for September 1994, a 14-month delay. This revised schedule (Figure 1) accommodates restructuring of formal test, transition to an upgraded RISC/System 6000 processor, relocation of the test program to the FAA's Laboratory Expansion Building and the engineering, development and test of additional capabilities needed for deployment called Block Update 2.

The following table represents a series of checkpoints established as part of our forward plan to demonstrate increasing system stability.

Checkpoints	1	2	3	4	5
Date	4/19/93	6/28/93	9/1/93	2/1/94	4/1/94
Common Consoles	28	36	43	62	62
Hrs. Duration	6	13	25	25	48

The checkpoints correspond to a build-up of major system functionality as well as an increase in the number of common consoles supported and the duration of continuous operation. Checkpoint 4 includes all components of ISSS and also executes tests that use a larger configuration than needed for the first site, Seattle.

Successful completion of ISSS requires long-term corrective action by both the FAA and IBM. The future of ISSS is not without risks. Some of those risks include:

- 1) The ability of FAA and IBM to agree on a final set of requirements for initial ISSS deployment. The current schedule is based on development assumptions which must bound the magnitude of new development.

ISSS SCHEDULE

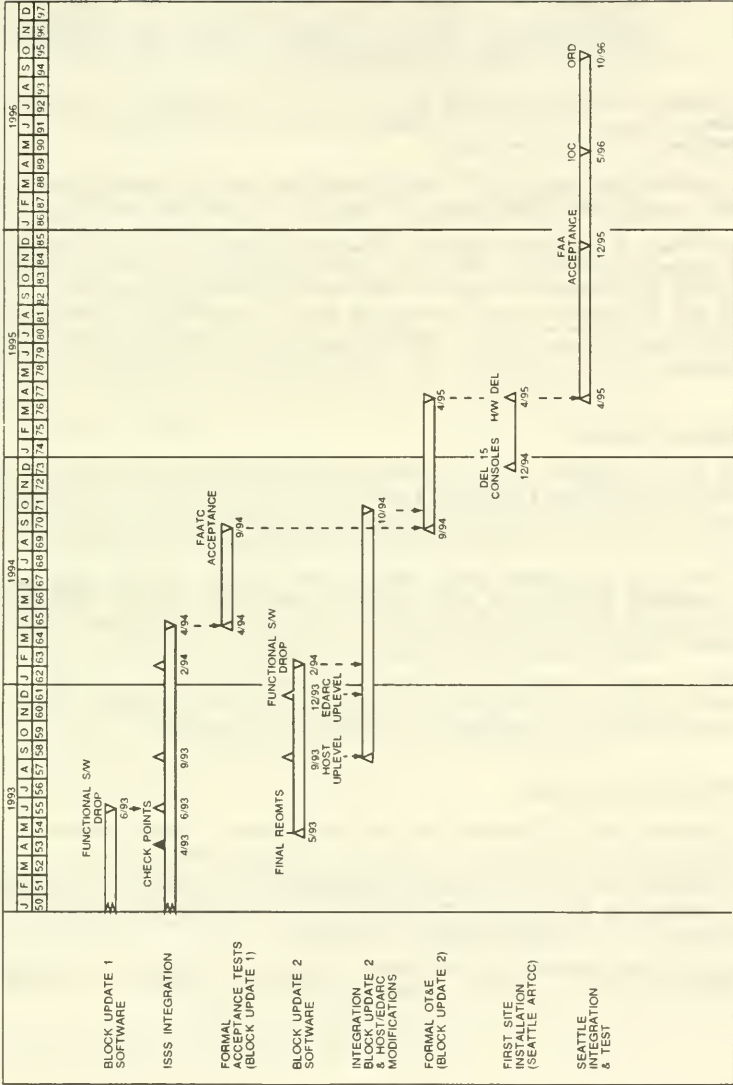


Figure 1

- 2) The fact that as users have access to the System in both the test environment and initial operation, they will want changes; the FAA and IBM must agree on an update procedure to accommodate change in an operational environment.

In addition to these, the FAA still has risk in developing a transition plan to bring online and then manage and control the system as it is deployed to the various sites.

Of course, the completion of user training and getting ultimate user acceptance with so many operational users will also be a significant challenge.

Confidence in the ability to make schedule dependa directly on the completeness of system requirements. The recent FAA assignment of Dr. Donald Mullikin as on-site ISSS manager has helped speed decision making on requirements issues. FAA and IBM together, must balance the conflicting demands of requirements changes, schedule and cost. Important trade-offs will be needed in the future, between system modifications and achieving the earliest possible operational schedule.

Financial Effects

The initial contract value of AAS to IBM was \$3.6 billion. Since inception IBM has experienced a net cost growth of \$.5 billion or 14%. In addition, FAA contract modifications have caused an increase in contract value of \$.3 billion. Thus, the overall contract value is presently \$4.4 billion.

It should be noted that some of the contract options, by their very nature, are mutually exclusive of other options. Therefore, the real expected value of the contract is between \$3.7 - \$3.9 billion, depending on the options which are exercised.

From a financial point of view, IBM is not benefiting from the ISSS schedule delays. Since ISSS is a fixed price incentive contract, we are highly motivated to complete ISSS as quickly as possible.

User benefits from AAS

In the past, all ATC systems have been constrained in their ability to respond to changing needs due to limited expansion capability, reconfiguration limitations in design, and rapid technological obsolescence of hardware. The AAS architecture specified by FAA will avoid these kinds of problems in the future. The result will be a system that is more responsive to the evolving needs of aviation.

Beginning with the deployment of ISSS, significant benefits will accrue to the airlines and other users of the air traffic system.

ISSS will eliminate the present Host-display channel hardware limitations that constrain the FAA's capability to add new control sectors in the ARTCCs. In conjunction with the Voice Switching and Control System, ISSS will provide the flexibility and capacity that enables FAA to adjust sectorization to accommodate increased levels of traffic and changes in traffic flows, which occur when new hub and spoke operations are established.

Further, the ISSS architecture provides increased redundancy which enables equipment maintenance, either planned or unplanned, to be done without taking the system off-line. This provision can avoid the kind of delays that may accompany an equipment outage in the present system. It is especially significant at ARTCCs with heavy air freight night-time operations, when planned shutdowns for equipment maintenance are regularly scheduled in today's system.

The TAAS segment will greatly improve surveillance processing, by using the airport surveillance radars, as well as inputs from long range enroute radars, that have coverage over the terminal area. This capability will minimize delays that can occur today in the event of equipment outage in airport surveillance radars.

The color displays in TAAS will improve the presentation of weather and turbulence information for the terminal area by using inputs from ASR-9 radar weather channels. When TCCC is implemented, it will interface with the new Terminal Doppler Weather Radars, which should improve the efficiency and safety of terminal operations during severe weather conditions.

ACCC will increase capability of the air traffic control system to support user requests for direct fuel-efficient routing, as well as provide an improved system platform for accommodating technologies, such as Data Link and Automated Dependent Surveillance, using satellite navigation systems.

Overall, these improvements are expected to significantly improve efficiency and safety of air traffic control for all users of the system. Moreover, the system will be more responsive to the future needs of users, due to the extensibility of the AAS system architecture and the adaptability of the controller console displays.

Conclusion

IBM believes that the FAA has established an AAS architecture that will be a world leader in air traffic control well into the 21st century. The fundamental direction and planned implementation steps of AAS are sound. The architecture can accommodate changes from limited consolidation and ISSS can serve as the integrating platform for future segment functionality as well as other applications.

If the FAA and IBM can jointly speed the decision making on requirements, and if we can continue our sharpened focus on schedule commitment, I believe cost containment will follow.

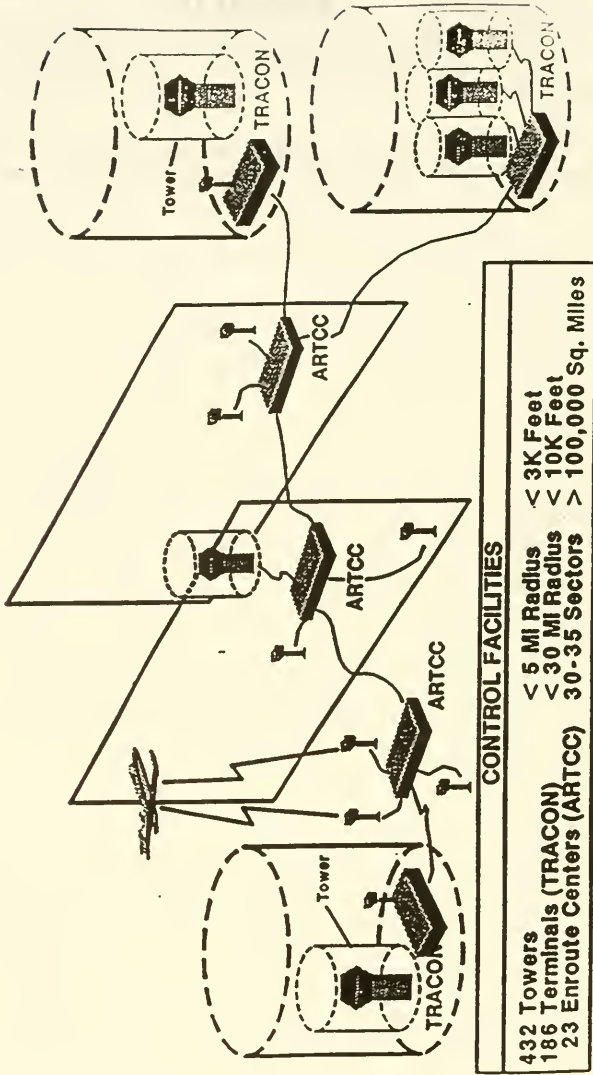
IBM has made changes. Our priority is to deliver a quality product that meets contract requirements on the replanned schedule. The program impact of any requirements changes will be clearly visible to both IBM and FAA management. The recent FAA organization change that elevated the AAS program to the FAA Administrator's level has improved decision making. Taken together, I believe that the FAA and IBM can manage this program to a successful conclusion.

You have my personal commitment and the commitment of the IBM Federal Systems Company that all necessary resources will be applied to achieve that goal.

EXHIBITS

ADVANCED AUTOMATION PROGRAM

Today's Air Traffic Control System



ADVANCED AUTOMATION PROGRAM

FAA Replacement Strategy

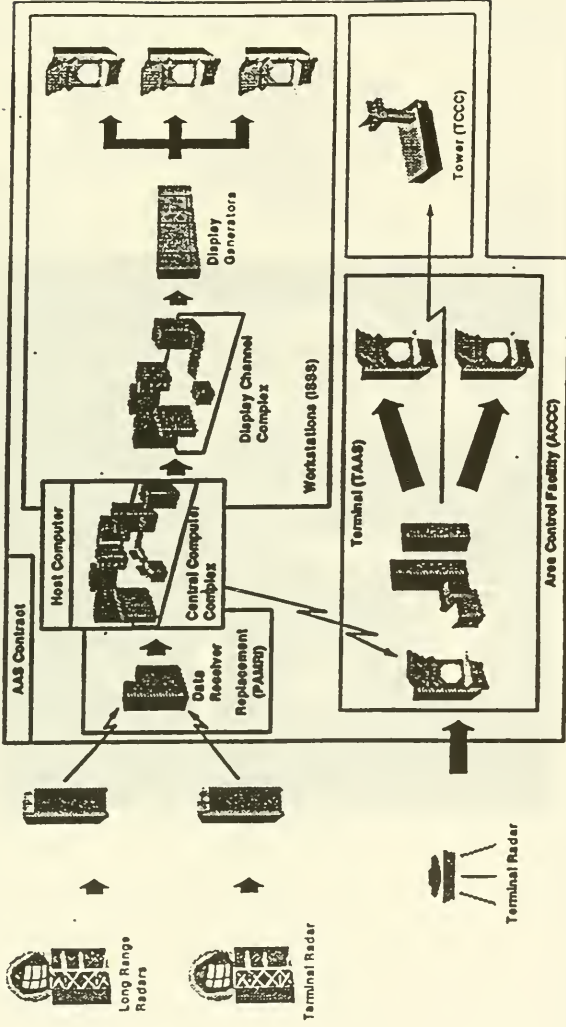


Exhibit B

AAS COMMON CONSOLE

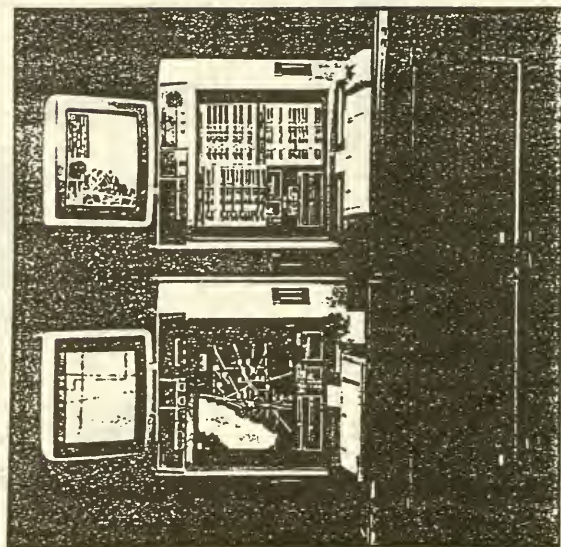


Exhibit C

ISSS ARCHITECTURE AND BACKUP CAPABILITIES

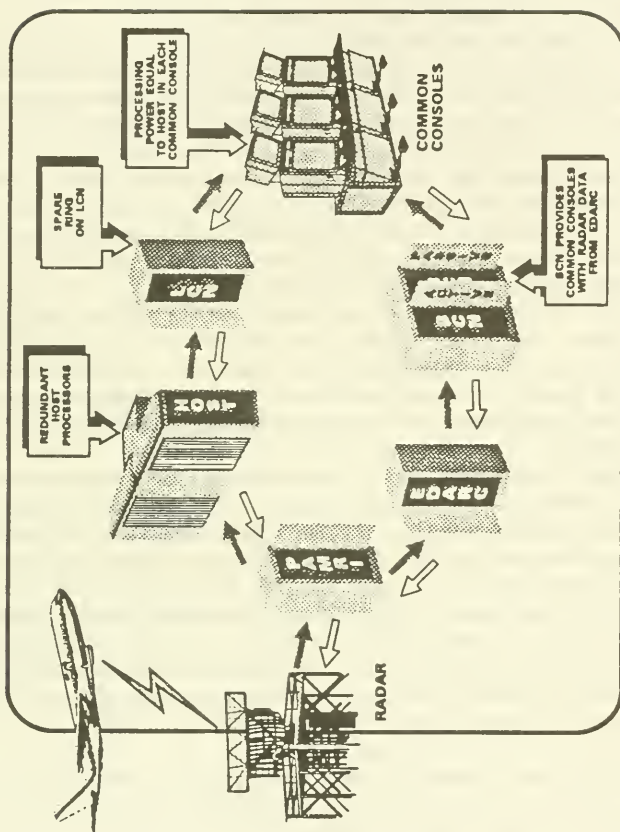


EXHIBIT D

IMPACT OF CHANGING TECHNOLOGY

Mr. CARR. We thank both you gentlemen for your comments. One wants to believe that every corner we turn, that this is it and now we are on the glide slope and not going to be put in some future holding pattern. I surely hope this is it.

You will have to forgive us if we are a little bit skeptical. Based on past performance, it is going to require a couple of months, maybe a couple of years of renewed credibility enhancing moves to make us all feel good about this again. I think one of the things that bothers me, it is not by way of blaming anybody, certainly we in Congress know that technology moves much faster than democratic institutions can assimilate its import or even begin to think about its use, whether it is things that are complicated like arms control and disarmament, HDTV or so many of the other issues that technology seems to put upon us.

Certainly AAS and the other components of modern air traffic control system have been part and parcel of that. All of us have only to look at the magazines for consumer electronics to know that by the time you buy the best TV set available today, there is another one that does a better job at lower cost within a very short period of time.

But I have to say that having said all of that, it seems to me that we haven't done as good a job, both in the agencies and perhaps in terms of oversight from this committee in trying to figure out what the appropriate technology is, and trying to figure that out when you are shooting at a moving target, that the rapid evolution of technological developments bring us, it becomes truly hard.

It would appear now that the mission of AAS, air traffic control modernization, has changed dramatically from at least those sale points, those points of selling the Congress and the public on the benefits was 10 years ago, that we have to readjust our expectations and alter our oversight accordingly.

We thought we were going to get major improvements and I guess we end up getting minimal improvements and have to rely on having to do this mainly because if we do nothing, we will have an air traffic control system that will begin to give us increasing trouble in geometric proportions. And yet we also just wonder about the future and about how committed we get to certain kinds of hardware and the software that drives them, and we are talking now about GPS and what is that relationship to the new environment.

I mean, we have been sort of going along with AAS on the notion that the sensors are going to be the same sensors tomorrow that they are today, and the sensors seem to be changing. I mean, have we any confidence that we are going to build a system that is going to have the flexibility to pull in data from new sensors rather than the old sensors, or are we just going to have it all over again where, oops, we have decided now that we are going to do something else and we are going to have a new method of tracking transportation platforms.

We know already that transportation platforms, whether it be a motor vehicle or an aircraft, they are not just transportation plat-

forms, they are information platforms as well and they are capable of giving us a lot more data than we have had in the past.

What level of confidence can you give us that the system we are designing today doesn't have embedded in it somehow or other a constraint that is going to require us to spend yet even more billions of dollars to take advantage of new possibilities? Mr. Ebker.

Mr. EBKER. Well, let me say from my perspective, I think the FAA has done a very good job of analyzing and looking at architectural alternatives. If we were to start with a clean sheet of paper today to design a new system, I do not believe we could come up with a better architecture than is being implemented.

It is being implemented with open systems, distributed architecture, which gives you the maximum flexibility, both horizontal growth and vertical growth. By horizontal growth, I am talking about the ability to add additional processors on the local area network with minimal connection time which really separates the implementation problems so you can break it down into smaller pieces.

The vertical growth pattern, it is implemented on risk architecture, open risk architecture, and that is the area of information technology which is exploding and you are getting a doubling of capability every 18 months. So the architecture is very flexible and can accommodate that. New sensors such as GPS should not be a big deal, should not require a major rearchitecture effort.

So I don't think you ought to be as worried about a major show stopper in the future, and I would even disagree with my friends from GAO and perhaps it is considerate to say that I think the report was relatively positive. It said that the—just the avoidance of maintenance costs will justify the development of a new system.

I am confident that the architecture of the new system will make available new user benefits that we don't know and can't even quantify today. So I think there is a lot of potential for user benefits that people just can't quantify today.

Mr. DEL BALZO. I think I am even much more positive than Gerry is regarding the platforms being designed to be called sensor neutral. The platform will not care whether or not an aircraft is navigating on a ground or whether it is navigating by GPS. Platforms will not care whether or not we are communicating on VHF or whether or not we are communicating through a satellite data link.

And the platform won't care whether or not it is getting its sensor input from a radar, a ground-based radar, or whether or not it is getting it from an airborne derived position from GPS data link back to the ground. There is a lot of advanced technology that is being put into today's cockpit. You look at the things that have happened over just the past couple of years. Sophisticated flight management systems, a sophisticated wind shear detection system, sophisticated computers, GPS coming on line, satellites for navigation, for communication, for surveillance, and the truth is, unless we have the products from the advanced automation system in place, airlines would have made a tremendous investment in new technology. They won't be able to use it. They won't be able to navigate through the air space any more efficiently than they are

navigating today because we don't have a ground infrastructure that will give them any more flexibility than they currently have.

ISSS USER REQUIREMENTS

Mr. CARR. You mentioned that you think you have the requirements problem corrected as a management process. How far are you from getting the requirements situation corrected from a substantive point of view? You have made these management changes. They probably haven't had an enormous amount of time to impact on the requirements themselves. When are you going to be able to get to a point where you have the requirements well enough defined that we can have confidence in them?

Mr. DEL BALZO. I think the first of June. We have frozen ISSS requirements. We have turned over to IBM frozen requirements against which they can now design and build to. There are two open issues, and Gerry will talk to those, that they are still working in terms of demonstrating the operational acceptability of the technical solutions to those requirements. But requirements have been frozen.

Mr. CARR. How many requirements are there? What is the number of requirements?

Mr. DEL BALZO. I don't know how.

Mr. CARR. But you have the requirements in a document someplace and they are probably numbered. How many are there? Do we know?

Mr. DEL BALZO. I don't know.

Mr. EBKER. It is about 600 pounds and it is about 20 feet high. In terms of what are the specifications, that is the high level SLS, the second level system requirements specific and the design specific. It is that much. I mean, you are building a record system and it requires that much requirements.

But we are down to, when Mr. Del Balzo and I are talking about requirements that we are still working, we are talking about 50 open issues that we are tying down and we have the requirements. Now it is a matter of working through those with the FAA to make sure we understand what they are looking for, they understand the design that we are proposing. We will be doing that, closing that out over the next 60 days.

Mr. CARR. How many of the requirements relate to, say, specifically hardware issues?

Mr. EBKER. I couldn't segment the requirements down to hardware, software, but let me say that generally the hardware requirements have been fairly early, fairly straightforward requirement. The hardware has not been changed that much. Most of the probations we have had, most of the turmoil, has been around software.

Mr. CARR. Is it possible to give this committee a summary of the software requirements?

Mr. EBKER. Summary in what sense?

Mr. CARR. Reasonably short.

Mr. EBKER. I doubt it. Let me assure you, I haven't even tackled that effort myself.

Mr. CARR. Suppose I am the program manager and I ask you for that.

Mr. DEL BALZO. I would think it depends on the level of requirement that you are interested in getting from us. The kind of requirements that Gerry and I talk about, for example, would be the requirement for electronic light data. The requirement for continuous operation so that in the event we are making a software change, we can keep the system operating.

It is an operational requirement for us. A requirement that says we have a requirement to record data that appears on a controller's screen for X number of hours and have the ability to play it back X times the speed. I mean, those are very high level requirements. Those are the kind of requirements that you are interested in and there probably aren't more than 20 or 30 of those and it is easy to do.

If you are interested in more levels of detail, we can provide it. I am not sure it would be very meaningful. We can do that obviously but it would not be very meaningful.

SCOPE OF AAS PROGRAM MANAGER

Mr. CARR. I am not asking because I want to sit and read all of this. The point of my asking is that you have testified that you now have top level management involved in requirements issues, and if the answer is that it is six feet high and so many pounds, I begin to get worried that top level management with all the other things it has to do is not really going to get on top of the requirements.

Mr. DEL BALZO. That is exactly right.

Mr. EBKER. Let me come back from a different—if you wanted to look at the system's level specifications, you are talking about a few hundred pages, it would be very easy to communicate, as Mr. Del Balzo says, we have to take those down to further detail to really be able to implement.

As I look at perhaps 50 requirements issues that we are still working that aren't completely tied down, there is one of them in that list that is of concern to me and it is called continuous operations. I will be spending all Thursday afternoon, four hours, reviewing the engineering design on continuous operations. That is not the sort of thing that would communicate to you necessarily, but it is a meaningful review and I am confident that we are going to close out the issues over this 60-day period.

Mr. CARR. In other words, if we had the program manager in here who reports directly to you and I had some technical people go out and look at that six foot stack of material, we could give that person a pop quiz and they would pass?

Mr. DEL BALZO. What person? Your person or my person?

Mr. CARR. The project manager.

Mr. DEL BALZO. Yes, sir.

Mr. CARR. That reports to you.

Mr. DEL BALZO. Yes, sir.

Mr. CARR. He is going to have that level of detail.

Mr. DEL BALZO. Yes, sir.

Mr. CARR. Mr. Ebker, you don't look convinced.

Mr. EBKER. Well, again, it is a matter of level of detail. I mean, no program manager with a program this large can know every detail of the system and every engineering convention and agree-

ment that has been made, but it is possible to have detailed engineers who do know those details who can summarize, who can pull out areas of concern or exposure, and then the program manager tends to focus on the number of issues that are flagged as most important, and through that process, be assured that the whole system is tied down and it can be implemented.

Mr. CARR. I guess just to convey to you my unease here is that if you had 50 technicians at FAA talking to 50 technical people at IBM and you are going through all these requirements and the result of all the discussions and negotiations, et cetera, would result in no financial impact on the U.S. taxpayers, I could probably say, fine, go to it. But I have this nagging worry, I guess, that at these lower technical levels you have people making decisions. Now, all these people are sincere, patriotic Americans trying to do the best thing, no one is trying to impugn their expertise, their motives or anything else, but you can get some rather lower level technical people making decisions. I don't want to say this in an unkind way.

I am trying to find the right words. You find some good people, fairly technically removed from political decision makers, both at FAA and at IBM making decisions which might drive billions of dollars, if they make one choice here and one choice there. In other words, when you say that you want to bring the requirements to top levels, and you have certainly apparently tried to do that at IBM with a reshuffling and a reorganization and at FAA with a reshuffling and reorganization of sorts, it seems to me that the complexity of this still eludes top management. No?

Mr. EBKER. I don't think so. Let me just come at it from a little bit different angle, that is, configuration management. The requirements are under configuration management control, which means that every change that goes in has to be recorded and it is analyzed against the requirements in the previous agreements. Mr. Del Balzo has instituted a program whereby any requirement that would have effect on cost or schedule has to be escalated to his level.

I do not believe that we are getting changes at the lower levels that are going to disturb the system at the high level that we don't know about.

AAS PROGRAM OFFICE AUTOMATION PERSONNEL

Mr. CARR. In the FAA program office, how much software people do you have there?

Mr. DEL BALZO. The program office itself? Six.

Mr. CARR. These are programmers who can talk to the IBM programmers and interface and they talk the same language?

Mr. DEL BALZO. Yes. I am not sure there was with a subtle point that Gerry made, one of the things that gives us tight control over requirements is the fact that we are holding ourselves and the program manager accountable to a cost target and a delivery schedule.

He can't afford to fool around with requirements very long if it is going to impact on either the cost target or the delivery schedule that we have committed to.

VOLPE CENTER COST BENEFIT STUDY

Mr. CARR. Mr. Del Balzo, what is the FAA's opinion of the Volpe Center's cost benefit study that—

Mr. DEL BALZO. Mixed. We have a mixed opinion of what I heard today and a mixed opinion of the analysis that I have actually taken the time to read and talk to the people at the Volpe Center about. I think it was good work that built upon some good work that was done in the past. I think they did a couple of smart things. I think they broke away the value of passenger time in their benefit analysis, not that they have discarded it but they have laid it aside. One of the things that you heard from my colleague at GAO this morning was that he was comparing what he thought was \$1.5 billion that he heard from the Volpe Center to a previous estimate of \$10 billion. That is not true because it is not a good analogy.

The previous estimates combined passenger time, even in increments of one minute. The Volpe Center did not do that. They did a much more analytical job when they approached benefits. So I think they did a decent job from that standpoint. On the other hand, I believe that they were very, very conservative. They were very conservative in the way they evaluated A versus B. They evaluated today's system against the system of tomorrow, when in fact today's system won't handle the job of tomorrow. It will fall apart on us.

They evaluated maintenance costs of a system that is 30 years old and they tried to project those costs 20 years into the system. The system would be 50 years old. The analysis they did I don't believe holds up. It is not done against a realistic base. But in spite of the fact that they were very conservative, they come out with very positive benefits by every part of the program.

The difficulty I had, and it was frustrating for me as I listened, what I heard this morning from the Volpe Center is not what I heard last week. It is not what I read last week. They were much more positive and much more optimistic. That is not what I heard this morning. I believe that if the committee and staff take the time to read the Volpe report and the Volpe analysis, the tone would be completely different.

But I think they did some very credible work.

I am much more optimistic about user benefits than I heard this morning and what I read. I am much more optimistic because I have seen our work. I have seen controllers playing with it. I know what it can mean for controller productivity and I know what it can mean in terms of allowing us to use the air space much more efficiently than we are using it today.

I know what the end benefits to the user are going to be.

Mr. CARR. Do you agree with the fuel savings of the Volpe Center?

Mr. DEL BALZO. No, I don't. I think the fuel savings from the Volpe Center were badly underestimated. Underestimated because what they were evaluating was an analytical version of AERA. They were not evaluating what it is that we saw in a laboratory. They were not evaluating it the way Mitre evaluated it. I think

you will see a significant difference between the Volpe recommended conclusions and the Mitre conclusions.

The Mitre conclusions I think were done based upon real world assumptions and not the assumptions that I think were much too conservatively built into the Volpe Center study.

Mr. CARR. Your recent agreement with IBM included a design freeze for ISSS or the ISSS portion of the program by April 1st. Has that occurred?

Mr. DEL BALZO. It occurred on April 1st.

Mr. CARR. Mr. Wolf, do you have any questions?

REASON FOR COST GROWTH

Mr. WOLF. I thank you, Mr. Chairman. I have a number of questions. I was on the Public Works Committee from 1981 through 1984 and I remember the day that Lynn Helms came up to present this program. Whose fault is it that all this has taken place? We went from \$2.5 to \$4.8 to \$5.1 billion? What—how would you analyze the problem or the fault or the blame if you want to get into that word? Is it FAA or is it the contractor?

Mr. DEL BALZO. I believe it is almost everybody's fault. Almost everyone who knows anything about the program who has ever been associated with the program in whatever organization. It is everybody's fault. I think the comparison—to begin with, is an unfair comparison.

It is unfair to compare the original estimate of \$2 point some odd billion dollars to \$5.1 billion today. The original estimate did not include a design competition phase. The original estimate did not include PAMRI that was implemented successfully.

The original estimate did not include tower modernization. The original estimate did not include a separate program to develop terminal automation software. That is completely different program that we are looking at today compared to the original estimates.

Mr. WOLF. So you don't think you are very far off target then?

Mr. DEL BALZO. No, I don't. I don't believe that we are very far off target. I do believe there has been cost growth in the program. I do believe there has been real cost growth. But my baseline is different. My baseline is 1988 when we signed the contract with IBM. I believe that is a fair comparison, going back to 1988.

Mr. WOLF. What was that, 4.8?

Mr. DEL BALZO. I show a total of \$4.3 billion in 1988 just in F&E. That went up to \$4.5 billion in 1990. That \$200 million of cost growth was associated with some requirement changes that FAA made. That \$4.5 billion has grown to \$4.7 and that is what it is today, and I believe now that there is a potential for another \$200 million of cost growth based upon the current 14-month delay that we are looking at.

Mr. WOLF. With that in mind what do you think the cost will be?

Mr. DEL BALZO. \$4.9 billion just in F&E.

Mr. WOLF. That will be it?

Mr. DEL BALZO. I believe so.

Mr. WOLF. Does IBM share that same commitment? Should we include language saying that no money above \$4.9 shall be appropriated by—

Mr. EBKER. My uncertainty is really based on—I am not sure exactly what all is in the 4.9. Certainly we don't see anywhere near that, so it is hard for me to bridge from one to the other.

Mr. DEL BALZO. I think the problem Mr. Ebker would have answering that question is the \$4.9 billion involves a lot of costs that are not in the IBM contract. It goes beyond the IBM contract.

GAO TESTIMONY ON ACCOUNTABILITY

Mr. WOLF. The question of accountability comes up over and over. The GAO testimony is riddled with statements that are less than optimistic.

Page 2, AAS schedule delays and cost growth have worsened over the past year, and that paragraph said three years behind. Then they say, although FAA's official estimate is \$5.1 billion including R,E&D for the entire AAS project, FAA officials acknowledged in March 1993 this estimate may grow another \$235 million.

Page 3, GAO says as a result FAA and IBM set schedules that proved unrealistic when IBM encountered technical difficulties, and they go on to say, we are encouraged by the changes. We recognize that it will take time for these management initiatives to work.

Then they go on to say, page 5; more critical, page 7, schedule delays and cost growth have worsened. It just kind of goes on. Page 9, FAA did not exercise adequate oversight of IBM's progress in software development. FAA has not been decisive in resolving basic requirements issues; page 10, different staff levels. Where are they? If you had to rate them, because we don't know, this is so technical that, frankly, I am not sure FAA knows and I am not sure IBM knows, so I don't feel particularly bad that Congress doesn't know because you all are doing this.

What grade would you give GAO's testimony insofar as accuracy?

Mr. DEL BALZO. Yes, sir. I always wind up giving GAO testimony close to an A, if not an A plus because they have never told us anything that we didn't already know. If you were to ask me how I would grade GAO testimony on analysis based on what I should be concerned about tomorrow, I give it an F. Tell me something I don't know that can be helpful to me. Please don't tell me something I already know that I have got under control. There is nothing that you heard from GAO that we don't have under control today. Tell me something I need to be concerned about tomorrow and I will listen every time.

TRW INDEPENDENT AUDIT

Mr. WOLF. Who can tell you what is out there for tomorrow? Is there another group that we should be talking to?

Mr. DEL BALZO. Sure. TRW. We commissioned an independent technical audit. The group of people that worked this issue pretty much full-time to either validate or tell us that we were wrong on terms of where we are in terms of software integrity, whether or not there are any technical show stoppers that we needed to be concerned about, whether or not the schedules we are talking about are realistic schedules to shoot for, look to TRW.

Mr. WOLF. Is TRW the best in the business? Is there——

Mr. DEL BALZO. Excuse me, I am sorry.

Mr. WOLF. Go ahead.

Mr. DEL BALZO. I believe they are the best in the business today in terms of being knowledgeable. That doesn't mean that you couldn't find someone else to come in and do another independent audit who would do as good a job as TRW. What I say is TRW is already into the program.

Mr. WOLF. How much independence does TRW have?

Mr. DEL BALZO. I think pretty much. This was done at the highest levels of the company, so on the one hand TRW is actually a support contractor to us. We pay them to give us this kind of advice. We did not want to contaminate this independent review. We asked TRW at the highest levels in the company to get people that were not working on the program to reach outside their organization to bring in other experts, which they did. I believe that they are totally independent.

Mr. WOLF. Mr. Ebker, do you have any comment?

Mr. EBKER. No, I would just say that the review team are very competent people. They did a good review. Their conclusion was that the schedule is tight and difficult. They have some concerns because the architecture has not been demonstrated, but they also concluded that they did not know of anything that should be done that wasn't being done, and at this point I am not sure what more we could ask.

ACCOUNTABILITY

Mr. WOLF. Is the assignment just too great, was it too bold, too extensive to begin with, that really you are being held to a standard that——

Mr. EBKER. Well, you know, it certainly is a complex problem, but I think we certainly have admitted on our part that we have not done as well as we could have, so we have fault. I think Mr. Del Balzo has recognized and said the same thing from an agency point of view. On the other hand, I would also say that we have done some very extraordinary things over the last six months to put the appropriate attention and focus on the program, to put the best program management procedures in place that we can, and I think we have done that.

AAS PROGRAM MANAGER

Mr. WOLF. New people are in place in both places?

Mr. DEL BALZO. Yes, sir.

Mr. EBKER. Absolutely.

Mr. WOLF. Is there a direct accountability? I mean, wouldn't it make sense to have some person just report directly to the Secretary and to the administrator, period.

It is like in my house with my five kids, if I don't know who is obligated to vacuum the family room, then everyone says I thought Brenda was going to do it or I thought Virginia. I am talking about accountability and holding people to it. Would it not be best to have one person who is kind of the guru of this and therefore they report directly to the Secretary? We have frequently changed ad-

ministrators, and it just doesn't seem to get any better. Would that help?

Mr. DEL BALZO. We have probably changed Secretaries more frequently than we have changed administrators. I think the answer is, yes, absolutely. We have done that. We have a single point program manager now in FAA that is reporting directly to the Administrator.

Mr. WOLF. What is his G.S. Level?

Mr. DEL BALZO. He is a Senior Executive Service reporting directly to——

Mr. WOLF. Is he a 16, 17, 18?

Mr. DEL BALZO. Senior Executive Service now is 1, 2, 3, 4, 5. The highest level is a Senior Executive 6. Program manager, I believe, is a Senior Executive 4.

Mr. WOLF. He has total access to the Administrator?

Mr. DEL BALZO. He reports directly to the Administrator now. The Administrator is totally accountable to the Secretary. The Secretary is personally involved. I believe that, in fact, we have done that. You asked the question earlier whether or not this was too big. I wish we had it to do again because I think we have learned a lot. I believe the lessons we have learned from this program will hold us in good stead as we begin other major acquisition programs and as we continue to manage some of the major programs that are in place.

Mr. WOLF. Of course, you all may be so old that you won't be there when this thing——

Mr. DEL BALZO. Touché.

OUTSIDE PROGRAM OVERSIGHT

Mr. WOLF. The last question that I have, and you are both good people. I just wonder if should there be a team of four or five people that this committee funds that is a constant check? The very best people from different perspectives as a constant monitor on this program? Obviously you are the contractor, and obviously you are with the government.

Should there be an outside monitoring group because I think the Congress is losing patience. And with all due respect, the Congress doesn't have nearly the understanding that you would have, and yet they keep seeing the numbers going up. Should there be something like that?

Mr. DEL BALZO. Congressman, six weeks ago I was asked that question by another committee and I said, no, I didn't think so because I believed we could reestablish our credibility as we go, as we meet closely-spaced milestones that we commit to meeting. When you ask that question today I say it would be okay. It might be worthwhile. If that is what it takes to restore credibility for us to bring this—and our ability to bring the program home successfully, I say bring them on. I don't believe that we need it. I believe that we are committed to a schedule. I believe that we are committed to successful implementation. We have advertised what it is that we are going to be doing month by month. I think we establish our credibility just by doing it in a very visible way.

We are now operating this program in a fish bowl. I believe that we are okay. I believe that we are on track. But if it takes another independent review, an independent audit, we would say fine.

Mr. WOLF. Well, not so much an audit. I don't think it would be an attack on your credibility. Certainly I am not so sure other people would have done that much better. I just think it is a helping hand. It is a testing. It is biblical.

In the Bible it says that it is good to have wise counselors. And sometimes I notice the FAA comes up here and bristles every time somebody, such as the NTSB makes a suggestion.

A lot of times when you bring a sickness before a doctor, he can't quite understand what it is and he farms it out to a specialist. I just wonder if it wouldn't be good to have an outside group, one that would give you some protection, help, advice, guidance, and also I think that would raise the comfort level of those in Congress who really don't understand that much about it and yet just know that there is something wrong. I may even offer an amendment here in the committee because when you look at the overall cost, that oversight would be so minuscule, and yet it may actually help all of you. Not to destroy your credibility, but perhaps even to enhance it.

I am a little bit concerned that you all are going to hunker in the fox hole because you have gotten a lot of criticism, and I remember the hearing that Lynn Helms testified in. It was around the corner, I think, on the second floor. I forget what room it was in, but I still remember, I think there was a large picture, mural of military people marching. I guess it was the Armed Services Committee. He went through the whole thing, he sounded so positive and so confident. It was in 1982. I just think it would be helpful for everybody involved.

I have some other questions we will submit for the record. If you could both give me or give the committee some sense, we are going to ask the same question to GAO and Volpe Center of what kind of panel that would be that may be of some help if the committee were to set up a group like that.

PRESIDENT'S INVESTMENT PACKAGE

Mr. WOLF. Mr. Del Balzo, in your testimony, you indicated that the fiscal year 1994 budget request for the Advanced Automation System (AAS) program is \$455.7 million from the F&E budget. You also said that \$25 million is requested separately as part of the President's investment package.

Can you elaborate on that separate \$25 million request? Is it in the stimulus supplemental? What is it for?

[The information follows:]

The FAA identified \$106.7 million in its fiscal year 1994 facilities and equipment appropriation request in support of the President's long term investment strategy described in his February 17 "Vision of Change" budget message. These funds are designated for air traffic control modernization which will help reduce delays, increase safety, and produce a more cost effective air traffic control system. The AAS program will upgrade the automation of the entire air traffic control system. The \$25 million of the AAS fiscal year 1994 request associated with the investment package is planned for early development of Advanced En Route Automation (AERA). AERA will bring significant benefits to airway users through direct and fuel efficient routings and preferred altitudes. The short-term, economic stimulus supple-

mental package proposed for fiscal year 1993 did not include any funds for the AAS program.

IMPACT OF ISSS DELAYS

Mr. WOLF. The delays in the AAS's second segment (ISSS-Initial Sector Suite System) are especially worrisome in the current climate of economic hardship in the aviation industry. This is especially so since later segments of the AAS are to yield user benefits, such as more fuel-efficient routes for airlines.

Given that all segments of the AAS represent a graduated transition from the old air traffic control system to the new, what does the two-year delay in the second segment (ISSS) mean for the remaining segments?

Won't this result in compounded delays in the outyears?

[The information follows:]

The impact of the ISSS delay on the Terminal Advanced Automation System (TAAS) is expected to be seven months. The impact to other segments such as Area Control Computer Complex and Automated En Route Air Traffic Control (ACCC/AERA) and Tower Control Computer Complex (TCCC) are overshadowed by the delays that have occurred due to limited funding in fiscal year 1992 and 1993. We are taking initiatives both technical and managerial, to minimize the delays within our FY 1993 funding constraints.

UPGRADES TO THE CURRENT SYSTEM

Mr. WOLF. As with the development of any new system, time is money. In addition to the specific cost overruns on the AAS contract, the GAO indicates that there are indirect costs as well. These result from measures the FAA is taking to upgrade the current system because the AAS will not be brought on line as soon as originally planned.

What upgrades have you had to go ahead and make to the current system due to the delays in AAS, and what have these measures cost?

[The information follows:]

The FAA has undertaken F&E programs estimated at \$420.1 million to meet agency needs to uplevel the terminal systems to exist to the year 2005.

The FAA is also examining the possibility of rehosting the display channel complex to replace aging equipment that is becoming increasingly difficult to maintain. Funds are requested in fiscal year 1994 to support this need, but a final decision to implement will not be made until after costs and benefits have been examined.

REASONS FOR PROGRAM DELAYS

Mr. WOLF. I applaud both the FAA and IBM for placing this critical project under the direct oversight of top management and I think we all hope that the serious problems are behind us.

In analyzing the delays that have occurred, so that they do not recur, how much of the time slippage has been the fault of the contractor experiencing difficulties with the software? And, likewise, how much of the delay is attributable to poor oversight on the part of the FAA, as well as frequent changes by the FAA in the specifications?

[The information follows:]

Both IBM and FAA must share the blame for changes. Some are driven from IBM design and development problems. Others are clearly new requirements from the FAA. In addition, there are cases where the requirements were either ambiguous or

misinterpreted, or both, and when both FAA and IBM fail to close open issues in a timely fashion.

Mr. CARR. Thank you. Before turning it over to Mr. Regula, I just want to say that you gave a fair answer in response to Mr. Wolf about the GAO. I just want to state for the record that the GAO, the value of the GAO isn't really what they tell you. It is what they tell us. They are tasked by us to tell us things that we don't know. They tell us a lot about what we don't know, which unfortunately, the FAA could have told us, but didn't tell us and ultimately because we have the GAO, the FAA does tell us, and we work in a more cooperative fashion because of that. I happen to think that while they are not necessarily correct and we understand that there are differences of points of view, I think they generally get an A for improving policy decisions in this country, both in the agency and then here in the Congress. I just wanted to make that point.

Mr. Regula.

CURRENT COMPUTER EQUIPMENT

Mr. REGULA. Thank you, Mr. Chairman.

As I understand it, you mentioned something about the equipment being 30 years old, Mr. Del Balzo. Is the existing system 30 years old?

Mr. DEL BALZO. Yes, sir.

Mr. REGULA. You upgrade it periodically. Are the computers modernized in the present system or is all the hardware 30 years old?

Mr. DEL BALZO. Some are and some are not. Terminal air traffic control system is 20 some odd years old. We continue to make software upgrades. We continue to make patches as needed.

The computer in our air traffic control centers was recently introduced in the middle to the late 1980s. That replaced the computer that was 25 years old that was built by IBM, that IBM wasn't maintaining anymore. We couldn't get spare parts for it anymore. There are a lot of things that we are maintaining in today's air traffic control system that we are holding together with a shoestring. A lot of parts are being custom made.

SYSTEM TRANSITION

Mr. REGULA. Do you anticipate that when this system comes on stream it will be a total transfer or will it be an evolutionary process?

Mr. DEL BALZO. No, one of the things that we have learned is that in our business we do things incrementally and evolutionary so that we upgrade as we go.

Mr. REGULA. This new system would be part of a continuum of upgrade?

Mr. DEL BALZO. Yes, sir. The big difference is the technology we are now introducing and an open architecture will make it very easy to make incremental upgrades as we go into the future without having to redo a complete system.

Mr. REGULA. As I understand it, the present system, the different control centers hand off a plane as it moves from, say, Dulles to

San Francisco, it is handed off through different centers; is that right?

Mr. DEL BALZO. Handed off from center to center in the en route air space.

Mr. REGULA. How many centers are there in the United States?

Mr. DEL BALZO. Twenty-two.

Mr. REGULA. Would you have the same number with this system?

Mr. DEL BALZO. We would have exactly the same number.

SYSTEM EFFICIENCIES

Mr. REGULA. So the efficiencies are not reducing the number of centers. It would simply give a better degree of control; is that correct?

Mr. DEL BALZO. The efficiency is in the flexibility that we have to issue to air carriers much more fuel efficient flight paths, much more direct routings, many more changes in a route due to changes in wind, due to changes or miscalculations in fuel burn. We can do that, that we will be able to do, that real time.

One of the advantages that we get with the advanced automation system, this AERA function that we talked about is the ability to probe ahead 20 minutes in advance, to predict the conflict between two aircraft before it occurs so that a controller does not have to be involved resolving conflicts in the air space real time when the conflict occurs. The computer is looking ahead all the time.

Mr. REGULA. So you are saying you would have a better degree of passenger safety?

Mr. DEL BALZO. You will have a better degree of safety, but you also have a better degree of air space efficiency. You will have a large economic pay back to the air carriers in terms of fuel burn, fuel efficient flights, fewer delays, because we are using the air space much more efficiently than we are today.

Mr. REGULA. Would this be true at the air field itself? Obviously, for example, when they circle or are bringing planes in and out, that is done, I assume, by the tower at National.

Mr. DEL BALZO. Yes.

Mr. REGULA. Would this change their procedure?

Mr. DEL BALZO. Yes, there is an automated facility at National. It is called a TRACON. A TRACON, a new TRACON is part of the IBM contract, so we will do in the terminal air space with one of the products that come out of this contract the same thing that we would do on the en route air space.

Mr. REGULA. You would have a more efficient system of moving.

Mr. DEL BALZO. Moving aircraft in and out, yes, sir.

Mr. REGULA. Do you think this system is necessary given the fact that these people indicate we may double the amount of passenger volume in the next, what, 20 years?

Mr. DEL BALZO. I don't think there is any question when we look at today what you see is that there are 23 airports in the United States that are severely impacted with delays. They are experiencing more than 20,000 hours of delay each year. If we don't do something, if one of the programs that does not happen is this one, you can expect that number to double by the year 2000.

FISCAL YEAR 1994 REQUEST

Mr. REGULA. For the \$455 million you are asking for, are we buying experimentation, buying hardware, are we buying research? What are we going to buy for the \$455 million and how much have we spent thus far?

Mr. DEL BALZO. What we have spent so far on this contract is just under \$1 billion. That is what we have obligated through the end of fiscal year 1992. What we will be requesting in fiscal year 1994, is \$455 million. We would be doing all of the work, including the operational testing of a new controller work station that is scheduled to be delivered to Seattle in 1996.

Mr. REGULA. Will this be a pilot program in Seattle of this equipment?

Mr. DEL BALZO. Seattle will be the first of the 22 air traffic control centers to receive the new equipment. This will be the first product delivery at an air traffic control center.

Mr. REGULA. You use Seattle to get the bugs out of it before you went ahead with the other 21?

Mr. DEL BALZO. Yes, sir.

Mr. REGULA. How long would it take you? How long do you anticipate it will take to experiment or run a pilot program at Seattle before you are ready to go?

Mr. DEL BALZO. It is not an experiment. We are delivering to Seattle in parallel with gearing up a full production line. We deliver the prototypes of this system to our own technical center in Atlantic City for full operational testing. That will happen in 1994 and 1995 prior to delivery to Seattle. Once we clear operational testing at our own facility, we would give the go ahead to IBM to start the full production line, continuing the limited production line started after acceptance testing in September 1994. We will get to Seattle, but everything else will then be happening in parallel.

Mr. REGULA. Then at what point do you go with the other 21? Is it on a continuing basis?

Mr. DEL BALZO. We would finish implementation as I recall—I don't have it exactly here—in about a year and a half.

ESTIMATED PROGRAM COST

Mr. REGULA. So that we spend \$1 billion. You are proposing about a half a billion this year. The total package is a \$5.1 billion; is that correct?

Mr. DEL BALZO. \$5.1 billion, yes.

Mr. REGULA. That includes what we have already spent, and what has been budgeted for this year?

Mr. DEL BALZO. Yes, sir.

Mr. REGULA. Will this reduce the number of controllers required or will it just make them more efficient?

Mr. DEL BALZO. Both. It will increase controller productivity. It will reduce the number of additional controllers that we would require by the year 2000 to handle the forecast demand by the year 2000. Will we have less controllers in the year 2000 than we have today?

The answer is, no. If the traffic demands are anywhere close to what we are projecting, we will not have less controllers. We would

have fewer more than we would have had if we did not have the system on line.

Mr. REGULA. So it will handle the increased volume of traffic with essentially the same number that you have now? Or at least it won't require as many additions?

Mr. DEL BALZO. Yes, sir.

CONTROL OF MILITARY AIRCRAFT

Mr. REGULA. Does your effort include control of all military aircraft within the continental United States?

Mr. DEL BALZO. Yes, it does. We operate a common civil military system. You should know that there are some military air traffic control facilities that the military operates for their own purposes. There is an option in this contract for the military to buy exactly the same hardware and software that we are buying, and that will be funded by the Department of Defense.

SYSTEM USE BY OTHER COUNTRIES

Mr. REGULA. I assume there is a lot of integration of air traffic control with other countries or with international facilities. If you were to put this system or when you put this system in place in the United States, so will the other nations or the international traffic control facilities be synchronized and geared to what we have and is there a likelihood that they might adopt a similar system?

Mr. DEL BALZO. Yes, we work very closely with the international community to ensure that we move in lock step. I believe that we are further along than any other country. There is a whole subject related to our advanced automation system contract that is called U.S. competitiveness, U.S. leadership. What you find is—and Gerry will speak for himself—as a result of the investment that we have made in this program, you will see IBM competing internationally. There were a couple of major awards that IBM has already achieved.

One, it helps U.S. industry, and second it helps standardization of a global air traffic control system tomorrow with the U.S. being the world leader.

Mr. REGULA. So in all probability there will be a market for this system beyond the United States?

Mr. EBKER. The answer is, yes, and there is a lot of competition on a worldwide basis for providing that capability. From the United States major suppliers like IBM, Hughes, Raytheon, Westinghouse, et cetera, Paramax are competing in that marketplace. Probably the largest market share is today by Thompson CFS from France.

OPERATIONAL STANDARDIZATION

Mr. REGULA. But are the systems always compatible even though they may be developed by different companies?

Mr. EBKER. Not necessarily. The degree of compatibility really falls out of the requirements, and to the extent that the Europeans are working together, that they are becoming more compatible, but not all countries pursue the same degree of compatibility.

Mr. REGULA. So a pilot that was flying international routes would have to be familiar with different systems; is that correct?

Mr. DEL BALZO. We are working to achieve operational standardization. There is not operational standardization among countries in Europe today. Computers don't talk to computers. Controllers don't really talk to controllers on a dedicated line the way we do here in the United States. It is not so much a question of hardware compatibility. It doesn't make any difference who different countries buy their hardware from to achieve standardization.

What is important is that computers are allowed to talk to computers, that on the interface there is harmonization. We work very closely to ensure that.

Mr. REGULA. We don't have that, yet, but we are working toward it?

Mr. DEL BALZO. Yes, sir. We have it within the United States.

Mr. REGULA. Thank you, Mr. Chairman.

SYSTEM PERFORMANCE CHECKPOINTS

Mr. CARR. Mr. Ebker, I would like to explore this issue of how many work stations operate simultaneously and why that is such an important milestone. Educate me, if you will. It seems that—tell me why I should get excited about that. We have, you know, systems all over this country, indeed the world, that are operating thousands of work stations off of systems transferring enormous amounts of data in real time.

Why should it be such a big deal that you have 20 of them operating for six hours or 56 of them operating for 18 hours? Why doesn't that figure dazzle me.

Mr. EBKER. Well, there is a lot of difference between what you might be doing in your work station in your office versus what an air traffic controller might be doing at their work station. Consider that they have very powerful processors that do a lot of computing. They have very complex displays with a lot of information that is changing on a regular basis. They are also communicating back to other computers that are getting other types of sensor data that all has to be correlated so that each one of these work stations is both doing a lot of work and it is communicating with other work stations and with other processors around the network. There is a lot of traffic that gets generated.

This traffic goes over local area networks, and as the capacity or as the message rate on a local area network increases, you have greater probability of finding bottlenecks where perhaps the total message volume can't be handled properly. Also with a high availability architecture, it is necessary even if the hardware would malfunction, malfunction in some way that the system that we have designed identify the malfunction, allow the traffic—the message routing to be rerouted some other way so that the process would continue and the controller wouldn't even know that there was some problem in the network.

The only point is the volume of traffic and the recovery process is much more complex than any normal user would expect working with a word processor or a spread sheet or something of that type.

COMPARABLE OPERATING SYSTEMS

Mr. CARR. What comes closest to what you are doing that is operational today? I mean, look at a major airline computer reservations network—are you doing something that is a quantum leap in technology above that? Here you have thousands of work stations distributed around the globe indeed, geographically far beyond what is contemplated with AAS, people in real time making changes in operational schedules. You know time, you know managing fleets of airplanes only for the airline that happens to own the CRS, but is tracking all kinds of other information too, not to mention fare information and distributed networks throughout the travel agent network and everything else.

Are you proposing to do something that is such a quantum leap above what they are doing that operating 26 of them or 56 at the same time is a big deal?

Mr. EBKER. If you look at—take American Airlines Sabre system reservation system, basically mainframe architecture, point out to the terminals, end user terminals. If anything happens at a user terminal, you are simply told the computer is down, it is not working, et cetera, and so there is no continual processing there. The terminal is a simple interaction from input back to the central mainframe back out, so there is no interaction with, let's say a terminal in Dulles being able to interact with a terminal in Atlanta, for example, so it is a much simpler topology off of a mainframe architecture, and, again, as we were discussing before, that is the architecture of the past.

The new distributed architecture with open systems is really the architecture of the future. It does have certain complexity in getting it operational, but once it is operational you have got flexibility like you have never had before.

SYSTEM ARCHITECTURE

Mr. CARR. It sounds like you are describing a communications problem.

Mr. EBKER. Sure, communications is a part of it.

Mr. CARR. Is that basically what the problem is?

Mr. EBKER. The fault detection isolation recovery is another very important part of it, yes.

Mr. CARR. What is the problem getting to 57? Is there a geometric problem in the way this works?

Mr. EBKER. It is geometric. Let me just say that our experience has been that every time you add a factor of two to the system you typically encounter another plateau or barrier that you then break through, and which then opens up another plateau. When I say that over the last two weeks we have gone from 28 consoles for six hours to 48 consoles for 12 hours, that is a fairly dramatic change because we have really picked up almost a factor of two on the number of processors and also a factor of two on the length of time, which really is a factor of four in overall system stability. And to be able to accomplish that, indicates that the system is maturing very rapidly, and so I have a great deal more confidence.

Mr. CARR. What are the limitations? Is it a data rate problem? Is it a MIPS problem? Is it a compression problem? I assume you use compression algorithms.

Mr. EBKER. Our models are measuring and predicting everything from processor speeds and utilization of CPUs to local area network message capacity. The message rate devices are monitoring both CPU storage and direct access storage. A system of this type has many parameters that all have to be balanced and tuned so that you get the performance you are looking for, and that is the process that we are in.

It is not a simple thing where you can say that is going to be the bottleneck. That may be the bottleneck today. We fix that, we tune that, it pops up someplace else, so it is a matter of analyzing the whole system and getting all the parameters in tune with each other.

MAXIMUM LOAD FOR SYSTEM PERFORMANCE

Mr. CARR. But essentially you are tuning everything to a standard, an ideal work station?

Mr. EBKER. We are really tuning to the maximum load on the performance of the system. We are driving for the 200 console system that will operate indefinitely. That is the standard we are driving to, and then all of these systems standards, all of these system performances, are tuned to achieve the overall system performance.

Mr. CARR. When you talk about the 200 that are required, are these 200 at one location?

Mr. DEL BALZO. Two-hundred ten at one location.

Mr. CARR. At one location.

Mr. DEL BALZO. That is a stress limit on the system. That was based upon the original design. It was based upon the original consolidation strategy. Original consolidation strategy said you are going to have all of these consoles located in 23 locations. We are now getting away from that so the stress on the system should be less than we previously thought, and we are in the process now of figuring out, well, what should be the final stress.

The impact of the limited consolidation decision on the AAS contract says that we will downsize the number of common consoles that have to be driven at any one time in one location. We will downsize the size of this new computer because in the old strategy, ACCC would have been located in 23 locations to do both the en route and terminal function. That computer is now only going to do the en route function, so it will be less complex than the original design. So there are a number of things we will go through now that we have the limited consolidation decision and fine tune the contract. That is the work that gets done in 1994.

FACTORS IMPACTING FACILITY CONSOLIDATION

Mr. CARR. To what extent was the limitation on the consolidation motivated by short-term economic considerations, personnel considerations inside the FAA, the cost to move somebody, for example?

Mr. DEL BALZO. To some extent that was one of the factors. We had a list of criteria that we evaluated the different options against. One of the criteria was what is the risk involved. The limited consolidation presents us with the least amount of risk. What is the cost involved. From a life cycle cost standpoint it is pretty much the same.

What is the impact on the people involved? The impact on the people for maximum consolidation would have required 8,000 people to move, moderate consolidation someplace in between. We would have moved 6,000 people. Limited consolidation, a little bit less than 2,000 people are eligible to move. They will not be required to move.

In many cases the consolidated facility will be within a commuting distance. So the impact on the people is the least. Which decision can we implement the fastest that would provide the benefits to the users in the shortest amount of time? Limited consolidation is the one that we can implement the fastest.

Mr. CARR. Were political barriers part of the limited consolidation?

Mr. DEL BALZO. I would be less than candid if we didn't ask ourselves the question as part of the analysis and how feasible will this be to do. We are not newcomers to the issue of consolidation. I think we have all lived through flight service station consolidation. We know how difficult that was. It did not get carried out as originally intended. We did not—so we consider that. The political impact is almost zero with limited consolidation. In fact, when we asked ourselves the question who will not like limited consolidation, I can't think of anyone who will not like limited consolidation, either from an economic standpoint, from a political standpoint, from an operational standpoint, from a risk standpoint, from a benefits standpoint. I don't know of anyone who would not like limited consolidation.

Mr. CARR. Well, in other words, your decision to do the right thing was tempered by some short-term economics and some political considerations?

Mr. DEL BALZO. Probably two of ten factors.

ACCELERATION OF AERA

Mr. CARR. I would like to ask just a couple of questions on the acceleration of the advanced en route automation. Let's talk about the degree of difficulty and the risks inherent in trying to pull that piece of AAS forward. I can appreciate the desire of management at the FAA to try to accelerate the benefits after having so many delays for so many years, but isn't there some risk in trying to pull that forward?

Mr. DEL BALZO. I don't believe so because we are not making production commitments. What we are saying is the controller work stations will be in place by 1987, and we should do everything we can in parallel with that to make AERA available at the same time. We are exploring ways on how that would be possible. We may conclude that it is not possible. I don't know that.

What I am suggesting is that in fiscal year 1994 we need enough money to do the analysis, to do the experimentation, to do what-

ever kind of costing has to be done to convince ourselves as to whether or not early implementation of AERA is feasible. We are not making major production commitments in 1994. There are questions that have to be answered as to whether or not we can speed up AERA and if, yes, how much can we speed it up.

AERA is on hold. We have not done anything in fiscal 1993 to implement AERA.

Mr. CARR. How difficult will it be to develop the software from where it is today if we are basically at zero?

Mr. DEL BALZO. We have got to reestablish the technical capability that we abandoned a year ago. We have got to reestablish that capability at Mitre. That is where most of the analytical work will get done. We have got to provide for a limited number of resources at IBM, but this is a program that runs in parallel with the controller work station effort. It is not dependent upon what happens in the controller work station. This will feed the controller work station when it comes on line.

Mr. CARR. It would seem, though, that at this point there would be a significant risk of slippage.

Mr. DEL BALZO. Of——

Mr. CARR. Of your goal to pull advanced en route automation forward. In other words, it would not be pulled forward as far as you would like.

Mr. DEL BALZO. I think we will have a better feel for that in three to six months.

Mr. CARR. Mr. Ebker, would you care to comment on that?

Mr. EBKER. I think the analysis is necessary to really determine what are we going to do after ISSS. My concern would be that if we postpone the analysis too far then there is going to be a gap of implementation which is not going to be a very efficient way to get the eventual system.

AERA IMPLEMENTATION

Mr. CARR. In 1987 when you testified before the Committee you indicated that AERA 1 software would be part of the basic AAS package, and you considered a low development risk. Is the current plan to include these systems in the initial AAS or——

Mr. DEL BALZO. Our plans have changed since 1987 and our current plans are to include AERA as part of ACCC delivery. The first AERA package is called Initial AERA Services. ACCC is designed to do two things. ACCC is to reengineer the existing software that is now executing on the Host computer in each one of our 22 centers. Having reengineered the software, the next package that would get introduced would be Initial AERA Services. But we have not done much on ACCC in 1993. There is nothing going on in AERA either. So both of those efforts have to come back alive in 1994.

In parallel with that, we are asking ourselves a question. Can we introduce what we call early AERA based on the controller work station and the existing host computer that is already there with an off-line processor? We will know the answer to that, I believe, in less than three months.

AERA SOURCE LINES OF CODE

Mr. CARR. Of course, the magnitude of software development generally is measured in lines of code. Is that a fair measurement, Mr. Ebker?

Mr. EBKER. No, but it is generally recognized as one way to measure a system. Some systems are measured in terms of function point, but, no, every line of code is not equal. For example, if we were working on display, working on what is going to be displayed on a tube, that code is relatively straightforward, fairly easy. If you are talking about systems code, which is down in the internals of the system, it is a very complex code, so, no, it is not really a good measure, but it is a generally accepted measure.

Mr. CARR. Well, what, Mr. Del Balzo, is the FAA's current estimate of the number of source lines of code AERA will require?

Mr. DEL BALZO. I don't have that detail here. I will submit it for the record.

[The information follows:]

Current estimates of AERA source lines of code (SLOC) are 200,000 for Introductory AERA Services (IAS) and 200,000 for Full AERA Services (FAS). These estimates are based on having an ACCC as the base infrastructure that would support the AERA functionality.

We are exploring moving some AERA benefits up in time. In an AERA architecture, that would use ISSS augmented with an AERA processor cluster as the architectural infrastructure, the size is estimated at 270,000 SLOC since some of the ACCC infrastructure would need to be provided as part of early AERA.

COST ESTIMATE FOR FULL AERA

Mr. CARR. What is your estimate of the total cost to develop the full AERA package in the time frame that you have mentioned today, Mr. Del Balzo?

Mr. DEL BALZO. I don't have that exact number handy. We believe that we can bring that—I don't have that number.

[The information follows:]

The FAA is reevaluating its approach to implementing AERA to bring the user benefits into the system as early as the ISSS time-frame. The analysis of what programmatic changes are required, and the cost of implementing AERA with that new strategy is not yet complete. The cost estimate for implementing AERA in our former plan is \$152.6 million.

AAS REQUIREMENTS

Mr. CARR. Okay. If you could supply that for the record. I know these things are kind of technical. It isn't in the nature of a pop quiz to embarrass anybody. Here are an indication of some of the questions that the Committee would like to ask.

Mr. Ebker, last year in an article in the Journal of Air Traffic Control your previous AAS manager, Bill Carson, said that one big issue in the AAS program was that, "it has become more important to expand the paper specifications to include everyone's nice to have requirements than to implement a system that meets the basic needs of the user." What are the basic needs of the AAS user, and what are the "nice to have" that are perhaps continuing to plague the requirements issues?

Mr. EBKER. Let me say that I think there are levels of requirements. I mean, there are things that are absolutely essential for

ISSS to have as part of the system when it arrives in Seattle to control traffic. Also there are many thousands of air traffic controllers out there, each of whom has their own opinion as to other things that would make the system more desirable, more operational, perhaps more efficient from their opinion. But, I think there would not necessarily be unanimous agreement as to what those are, so there is another category that we would call nice to have.

I think one of the difficulties the FAA has been grappling with is how to separate and identify that minimum set. Considering the amount of requirements, one turmoil over the last few years is, are we doing things that aren't absolutely necessary for the initial system? Bottom line, we can't make that call. We are really dependent on the FAA to make that decision. Mr. Del Balzo has had a number of task forces looking at the various aspects of the system to try to narrow that down. When Mr. Del Balzo says requirements have been frozen by 441, we received a set of requirements that had been scrubbed very intensively by the FAA and certified that these were the last set of must-have requirements for the Seattle deployment. That is what we are working off.

Mr. CARR. Is it impossible to get an agreement that would say we are not going to have any "nice to have," but we are going to develop the requirements, the remaining requirements in a way that they can be added at a later time?

Mr. DEL BALZO. Oh, absolutely, we have made that decision. There will be no nice to have requirements that are added on. Every requirement that gets added on now will be a critical requirement. For example, to update the software on the existing Host computer either monthly, quarterly or whatever. We have frozen updates on the Host computer because for every update that we make on the Host computer, that update has to be factored back into the work that IBM is doing on ISSS. The only updates that we will be making from now on are what we would call critical air traffic control safety updates. These are must have, not nice to have.

Mr. CARR. Mr. Wolf.

BONUSES TO EMPLOYEES

Mr. WOLF. I thank you, Mr. Chairman. Just a couple questions.

Mr. Del Balzo, were there any bonuses given to employees that were involved in supervision of the program over the years?

Mr. DEL BALZO. Yes, there were.

Mr. WOLF. Can you submit them for the record so we can see?

Mr. DEL BALZO. Surely.

[The information follows:]

The number of Senior Executive Service members who supervised the Advanced Automation System (AAS) program that were given bonuses from fiscal year 1990 thru fiscal year 1993 are as follows:

Fiscal year:	Number
1990	4
1991	8
1992	4
1993	N/A

IBM EMPLOYEES

Mr. WOLF. With regard to IBM, can IBM submit for the record the names of the individuals that are going to be involved in this?

Mr. EBKER. Involved in the program?

Mr. WOLF. Yes.

Mr. EBKER. We have about a thousand people in the program. Would you like all of them?

Mr. WOLF. Why don't you submit a thousand names, then, and why don't you submit the top ten whose heads will roll if it doesn't work. Obviously, your name would probably be at the top of that.

Mr. EBKER. It is there, yes.

Mr. WOLF. Because the accountability——

Mr. CARR. It is now.

Mr. WOLF. It isn't quite fair to only hold the FAA accountable. They are career government employees, and I think the names of the people at IBM should also be out there so that we know who we should give the bonuses and the laudatory comments to if this thing works out, so if you could submit that for the record.

Mr. EBKER. We will do that. Let me just say, as I mentioned before, there have been people at IBM that have been taken out of their job as a result already.

[IBM response follows:]

The AAS organization of individuals managing the program follows:

G.W. Ebker, IBM Federal Systems Company Chairman & CEO, AAS Program Manager.

H.A. Padinha, Director, ISSS Program Manager.

J.F. Clemons, AAS Software Development Manager.

M.H. Kramer, ISSS Engineering Manager.

D.A. Amoriell, ISSS Test & Integration Manager.

E.L. Jenks, FAATC Implementation & Test Support Manager. English Creek, PAMRI Segment Manager.

D.E. Zarefoss, ISSS Deputy Program Manager.

R.O. Sogard, Director, Segment Management.

J.S. Hurley, ACCC/TCCC Program Manager.

T.P. Trueman, SSCC Program Manager.

W.B. Oakcrum, AAS Program Control Manager.

L.M. Alexander, TAAS Program Manager.

M.D. Klein, SDCC & Hardware Engineering Manager.

J.R. Cantwell, ATC Plans & Controls Manager.

B.W. Parkinson, ATC Systems Assurance Manager.

D.R. Zebra, ATC Contracts & Procurement Manager.

J.P. Murray, ATC Finance & Business Controls Manager.

PRESIDENT'S INVESTMENT PACKAGE

Mr. WOLF. I know that. I just think the accountability question is so important. It doesn't mean that if it doesn't work, people are bad. I think the accountability makes a big difference.

The other question, Mr. Del Balzo, in your testimony you indicated that the fiscal year 1994 budget request for the advanced automation system was 455.7. You also said \$25 million is requested separately as part of the President's investment package. Why is \$25 million in the investment package, in the stimulus supplemental?

Mr. DEL BALZO. AAS is the single most important program that you will find in our entire Capital Investment Plan. The money that we are asking for to support AAS is higher than any other

project in fiscal year 1994. The \$25 million added investment from the President's economic stimulus package, one would have an operational pay back to us in terms of earlier benefits. If you were to ask where that money is, it is primarily in early implementation of the AERA.

Mr. WOLF. But why was it put in the stimulus package?

Mr. DEL BALZO. I can't answer that why, I am sorry.

Mr. WOLF. Was it just sort of everyone had a memo to find things to go in the package?

Mr. DEL BALZO. No, we were asked to identify those programs that could benefit the most from additional money that would come from a stimulus package. Those programs that would have jobs created in the same fiscal year that the money was being appropriated.

Mr. WOLF. But this was going to have to be done anyway?

Mr. DEL BALZO. This would have to have been done anyway, yes, sir.

Mr. WOLF. I wasn't quite sure it was in that package.

Mr. DEL BALZO. This program met, of all of the programs that we have in our Capital Investment Program, that criteria better than any other program we had.

Mr. WOLF. Were you obligated to come up with something?

Mr. DEL BALZO. We were asked. I am not sure we were obligated. We were asked.

[Additional information follows:]

The \$25 million requested in the economic stimulus supplemental for Fiscal Year 1993 did not include any funds for the AAS program. The \$25 million requested in the Fiscal Year 1994 investment proposal is planned for the early development of AERA.

Mr. WOLF. Okay. I have no further questions.

Mr. CARR. Well, thank you very much. It has been a long hearing. We have gone through the lunch hour. I just would like to once again note the tremendous cultural change going on at the FAA. If the responsiveness continues I am sure we are going to have a great time together. I have had to sit here, however, and grade each one of you, and I thought that I would give a first prize, a second prize, and an honorable mention, and I have tried very, very hard not to give the boss the first prize, but I really, I have to conclude that Joe, your tie is the best.

Mr. WOLF. Can I vote on that, too? I don't agree.

Mr. CARR. What do you know about ties?

The second place goes to Ruth Leverenz. I think that is an outstanding tie. Of course, it sort of all fits together. And I expect that maybe next hearing you will all be wearing yellow jackets. And honorable mention goes to Marty, just for putting it on. [Laughter].

I have some additional questions which I will submit for the record.

QUESTIONS TO SECOND PANEL

NEGOTIATED CONTRACT MODIFICATIONS

Mr. CARR. It is one thing to reach an agreement in principle with IBM on how to proceed with the program, but it is another thing entirely to agree on what is an acceptable cost to do that within

the specified time frame. Mr. Del Balzo, when will you have a negotiated contract modification which addresses the costs to meet the ISSS operational readiness date you have established?

[The information follows:]

IBM's proposal in response to the cure notice will be negotiated this summer, and the contract modified in September 1993. The cost of any requirements changes as a result of the April 1 requirements freeze will be a separate contracting action with costs known in August 1993 and contract modification thereafter.

REMAINING ISSS TECHNICAL CHALLENGES

Mr. CARR. The GAO indicates a number of major technical challenges with ISSS software which remain to be resolved. For example, the system has only been tested simultaneously with 56 work stations when 210 are required. Mr. Ebker, would you describe what you see as technical challenges remaining for ISSS?

[The information follows:]

The major technical challenges to the successful implementation of ISSS are as follows:

Timely maturation of the ISSS software so that it operates continuously, is predictably stable, and meets stringent time constraints on performance in the maximum configuration of 210 consoles, operating under the wide variety of system loads to which the ISSS will be exposed.

Technical capabilities to support the variety of transition modes for the combined HOST, EDARC, and ISSS systems; these transitions include not only the cutover to new software releases in each of these systems but, also, the on-line reconfigurations that accompany any failure and recovery of HOST, EDARC, and/or ISSS subsystems.

Transition of operations at the field sites from the HOST system using paper flight strips to HOST-ISSS with its electronic flight data displays; this involves not only the correct functioning of system hardware and software but, also, the appropriate training and new operational procedures for FAA's air traffic controllers and system engineers.

MONITORING SOFTWARE DEVELOPMENT

Mr. CARR. Mr. Del Balzo, the GAO testified that you still have only limited capability to monitor software development and could not provide such information to them, even though the main challenge of this program is in software development. Why after so many years does the FAA lack such critical data and what does that say about the risk that we will see future problems?

[The information follows:]

The data has existed but either in reports to the Government that were received and analyzed "after the fact" or in IBM data bases that could only be accessed on site.

With the onsite ISSS team, we now have real time access to software development status. Weekly formal reviews are held on ISSS, including software development. Reviews throughout the week are held on specific software development issues. We have complete, real time access to IBM data bases on the status of software fixes on Program Trouble Reports. Software planning and costing data are available and reviewed weekly.

Using the data available on a more timely and complete basis will allow the FAA management to have a more accurate and timely picture of software development status. More importantly, the FAA now has the ability to influence the priorities given to software development to ensure their consistency with FAA requirements. This allows for more effective risk analysis based on critical software development issues.

Mr. CARR. Mr. Ebker, are there technical risks in AAS development that you perceive to be beyond your control, such as reaching the ambitious "seven nines" of reliability? In other words,

99.9999999 percent reliable. Are we getting ahead of the technology in this program?

[The information follows:]

The availability requirement is clearly state-of-the-art for the hardware and software system of this magnitude. The software design is at the leading edge of the technology, in terms of detection and recovering from software "failures" as well as hardware outages. Only time will tell, as the system maturity increases in both hardware and software, whether the overall reliability has "grown" to meet the "seven nines" requirement.

POSSIBLE TAAS DELAYS

Mr. CARR. Mr. Ebker, in your testimony you indicated that design and development of the hardware and functional software for TAAS is basically on schedule, but problems with ISSS hardware will affect completion of TAAS factory tests by about seven months. Is it possible there will be further delays in completing the TAAS work?

[The information follows:]

TAAS has not been delayed by problems with ISSS hardware. However, the TAAS schedule was impacted approximately seven months by the ISSS delays in completing the system services software which is used to manage complex network operations common to both segments. Other parts of TAAS development are proceeding according to schedule.

It is possible that delays to the current TAAS deployment schedule could occur, due principally to:

Software changes to accommodate functions which have been added to the fielded ARTS IIIA systems since the time when TAAS requirements were specified.

Additional work which would accompany a potential change in FAA's plan to install the first TAAS in a Metroplex Control Facility instead of a Seattle ARTCC, with a different physical and operational environment than had been planned.

Changes in the TAAS software to reflect the feedback from controllers who are reviewing the current computer human interface.

FAA MANAGEMENT ACCOUNTABILITY

Mr. CARR. Mr. Del Balzo, in your statement before the House Public Works Committee, you said that "the program director will be accountable for cost containment and keeping the program on schedule." That just seems to be good common sense. Haven't you already been practicing accountability?

[The information follows:]

Yes, the program manager has been accountable for cost containment and keeping the program on schedule in the past. Recent management changes give the program director overall accountability, with the help of an ISSS program manager responsible for ISSS reporting to him.

Mr. CARR. Is the lack of accountability one reason why the program has shown continued cost overruns and schedule delays?

[The information follows:]

The program manager has been accountable for cost containment and schedule achievement. Lack of accountability is not the reason for cost growth and schedule delays.

Mr. CARR. In February 1990, Admiral Busey appeared before the Public Works Committee and discussed the FAA's acquisition reforms. Let me say that I think Admiral Busey did an excellent job as FAA administrator, and many of his acquisition reforms were solid ones. However, the FAA has a way of not fully carrying through on some reforms after administrators leave.

Let me quote one passage from that hearing which dealt with the need to surface technical problems in development programs: "What we need to do is to be tuned in early on when a contractor is running into difficulties or when red flags come up so that we can detect these difficulties as they develop and begin to deal with them in a firm but fair way early on."

It seems that this program has not been very good at surfacing problems, since senior FAA management often appear surprised when the problems eventually come out.

Mr. Del Balzo, what does the FAA need to do in order to make Admiral Busey's idea a reality?

[The information follows:]

We believe that the AAS program management has done a good job of running up a red flag within the program structure. Where we have not done a good job in the past is in resolving the underlying technical problems, exercising sufficient, continuing top-management focus on the program, and providing adequate top-level attention to requirements changes in the program. We believe that our recent management changes remedy these shortfalls.

IBM MANAGEMENT ACCOUNTABILITY

Mr. CARR. Mr. Ebker, would you agree that this has been a problem, and if so, what specific actions have been taken to address that situation at IBM?

[The information follows:]

This clearly was a problem in the program last year; my monthly review did not provide the visibility I needed to identify the seriousness of the software development problems.

I have taken several management actions that will ensure this situation will not recur:

I personally have assumed direct responsibility as AAS Program Manager and have direct, daily visibility into the status of the program.

Mr. Padinha is assigned full time as the ISSS Segment Manager. He reports directly to me, and has daily, detailed working meetings to both assess status and resolve system issues.

I meet approximately every two to three weeks with top management in FAA to review the status of the program.

Mr. CARR. Mr. Ebker, your statement admits that when schedules started to slip, the pressure became so intense "that well-intentioned people compounded the problem by not fully complying with the rigorous software development process." Doesn't IBM have management practices which can detect those shortcuts as they are happening, instead of much later, after they have snowballed into a huge problem?

[The information follows:]

IBM does have established software engineering and management practices to control the development of software, but these were ineffectively applied by some levels within the organization due to the pressures to meet schedules. In addition to the management actions mentioned earlier, we have audited the processes in place, identified the defects in practices and procedures, and clearly re-established the disciplined development environment to produce quality software products on schedule.

FAA PROGRAM MANAGEMENT CHANGES

Mr. CARR. Costs cannot be predicted with any accuracy unless the system configuration and requirements are well understood and under control. On that point, Mr. Del Balzo, you advised the Public Works Committee last month that "we are committed to

maintaining much closer control over any requirements changes that was the case before." What specific changes in the management process will ensure that this is more effectively controlled?

[The information follows:]

As part of the management changes that have been made to address the problems in the program, senior officials reporting to the Associate Administrators of both the Air Traffic and Airway Facilities organizations have been appointed "operational program managers" to work with the AAS Program Director in managing the AAS program requirements. Also, the AAS Program Director reports directly to the FAA Administrator. These changes will ensure more effective control of the AAS requirements by FAA.

CONTROL OF PROGRAM REQUIREMENTS

Mr. CARR. Let me read you some other testimony: "We have a very rigid process in place now to control requirements. The requirements are now under configuration control. There will be no change in requirements, or cost, or schedules without going through a very formal process."

That statement was made before the Committee by Marty Pozesky, then Deputy Associate Administrator for Development in April 1987. It is now six years later, and obviously the configuration was not effectively under control. Why should we give greater credence to FAA's assurances the second time around?

[The information follows:]

The changes that have been made to the AAS requirements over the past several years have in fact been approved by the agency configuration control board. The FAA has not done as good a job as it should have done in challenging basic FAA procedures when examining requirements. The recent FAA management changes that have been discussed above with the respect to operational program managers assure that when requirements changes are identified in the future one of the alternatives that will be considered is examining changes to FAA procedures and basic ways of doing business.

TOTAL COSTS FOR FULL AERA

Mr. CARR. What is your estimate of the total costs to develop the full AERA package in the time frame you have established?

[The information follows:]

The FAA is reevaluating its approach to implementing AERA to bring the user benefits into the system as early as the ISSS time-frame. The analysis of what programmatic changes are required, and the cost of implementing AERA with that new strategy is not yet complete. The cost estimate for implementing AERA in our former plan is \$152.6 million.

BASIS FOR CURRENT ISSS SCHEDULE

Mr. CARR. Mr. Ebker, your statement says that the current ISSS schedule is "based on development assumptions which must bound the magnitude of new development." Would you elaborate on that statement?

[The information follows:]

The ISSS software called Block Update 1 is scheduled for completion on 6/8/93, and this provides the baseline for formal Acceptance Tests. The ISSS schedule for Operational Test and Evaluation (OT&E) and deployment is based on the development assumption that no more than 47,000 additional lines of operational code will be required to accommodate any requirements/design changes as a consequence of the FAA's requirements "freeze" on April 1, 1993. This additional software will be packaged as Block Update 2 and must be completed by 10/94, prior to the conduct of OT&E at the FAA Technical Center.

CLOSING REMARKS

Mr. CARR. Thank you very much. The Subcommittee is adjourned.

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